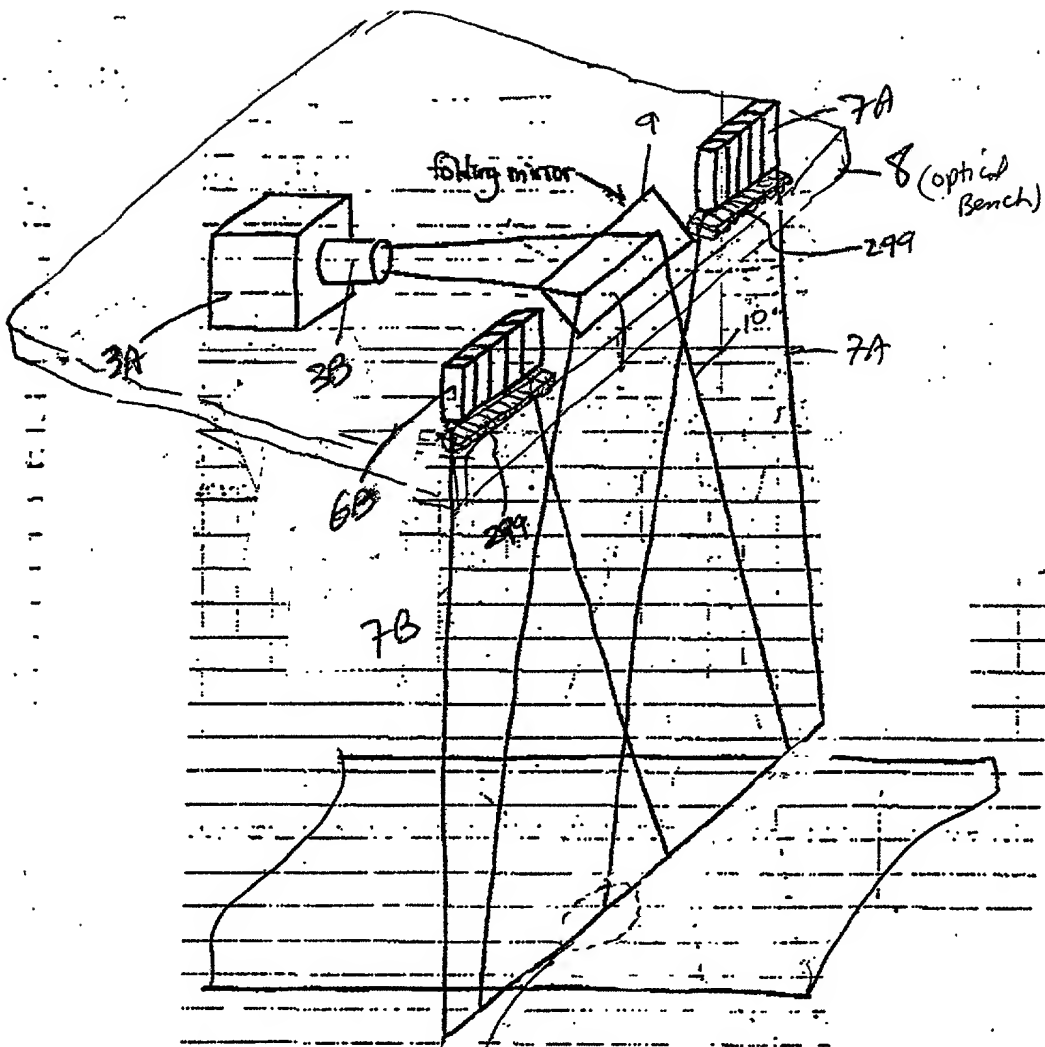


FIG. 1A

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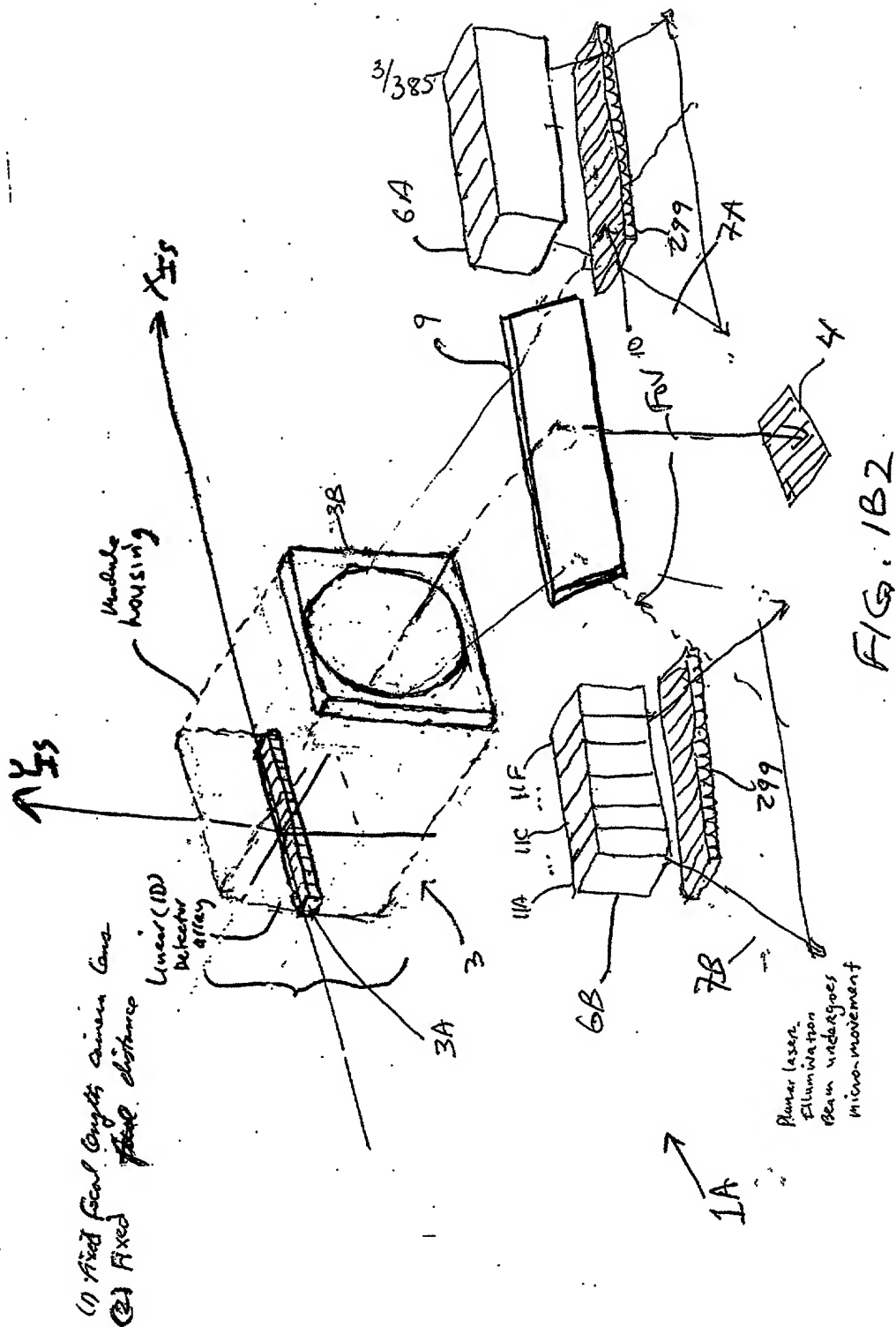


1A

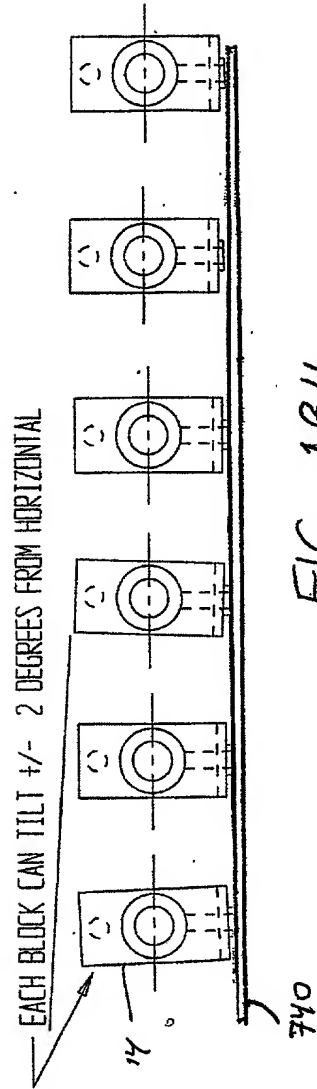
FIG 1B1

FIG 1B3

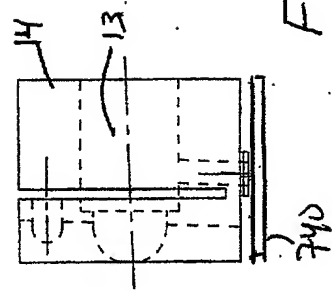
Magnified field of view of
CCD sensor element on
object
width of projected
laser illumination
beam on
object



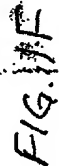
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VLD BLOCK CAN PITCH FORWARD FOR ALIGNMENT WITH OTHER VLD BEAMS



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covered
covered
computer

[illegible]

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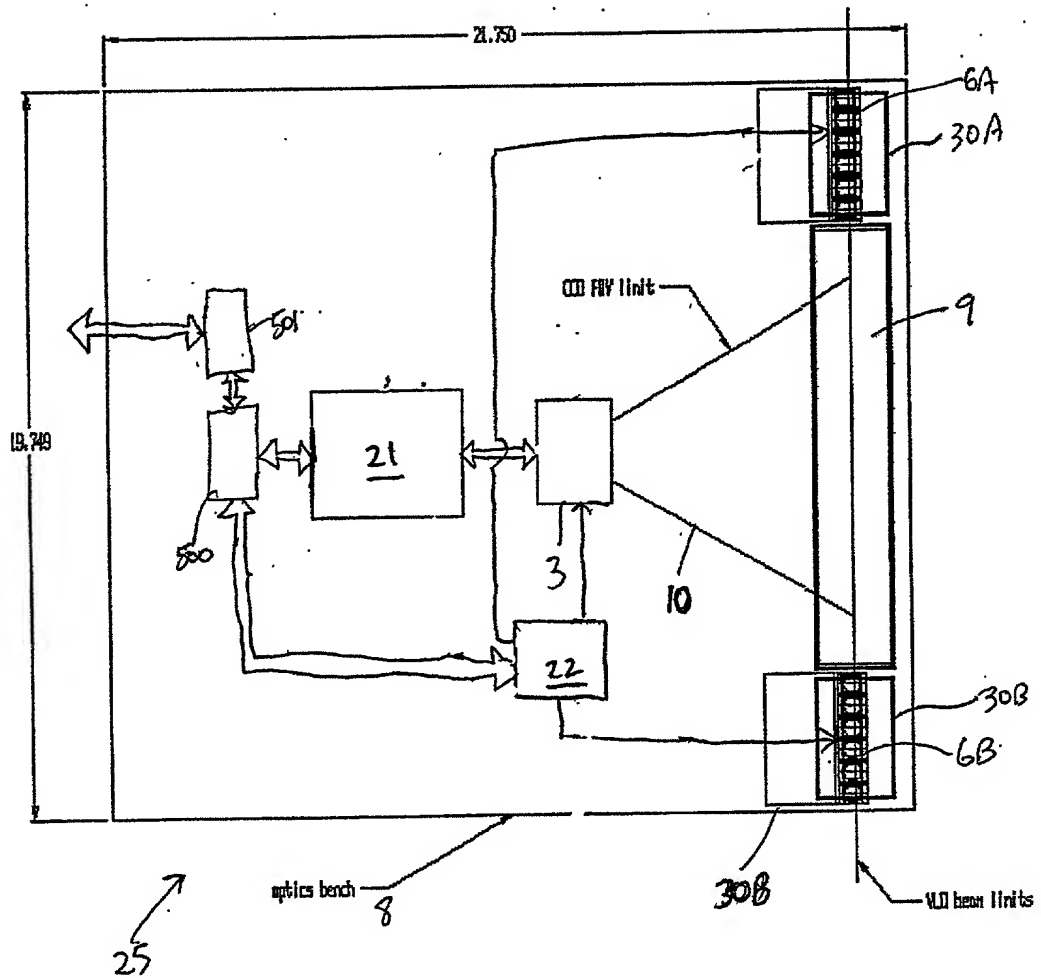


FIG. 142

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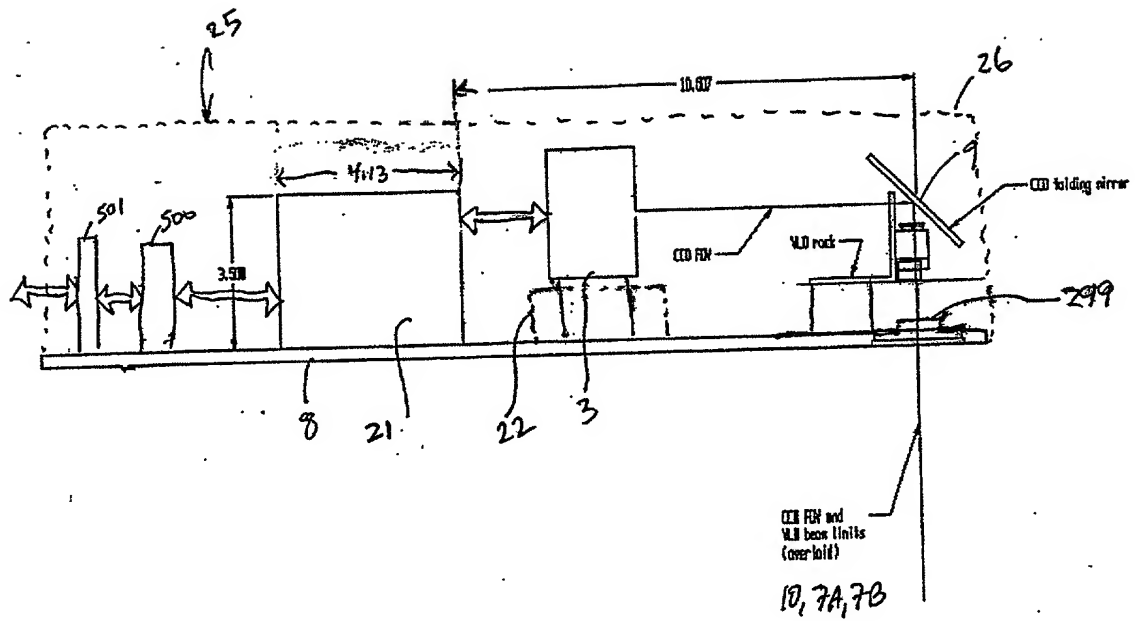
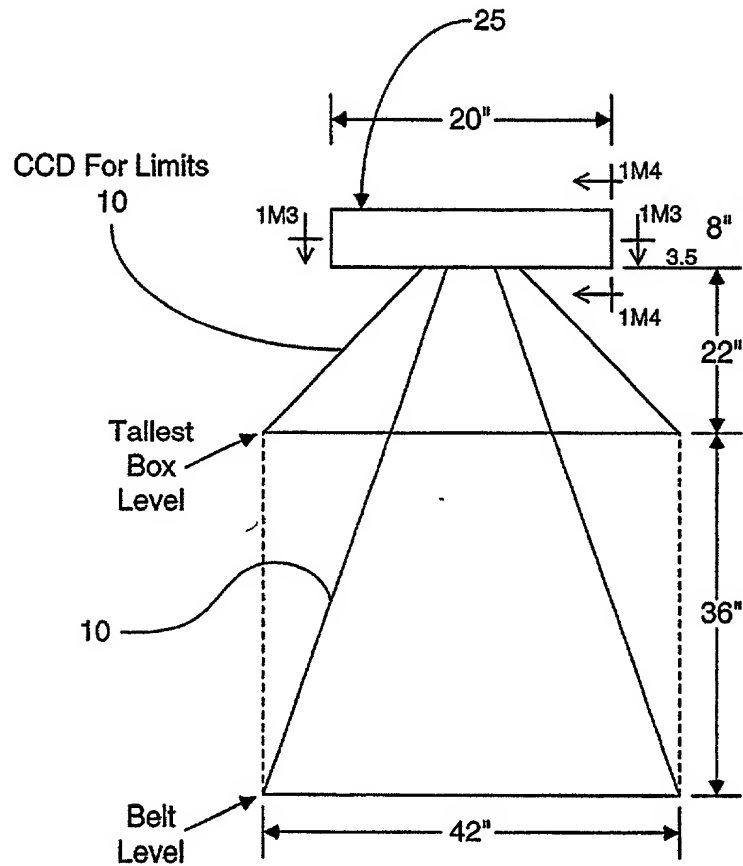


FIG. 164

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* Fixed Field Of Field

FIG. 1G5

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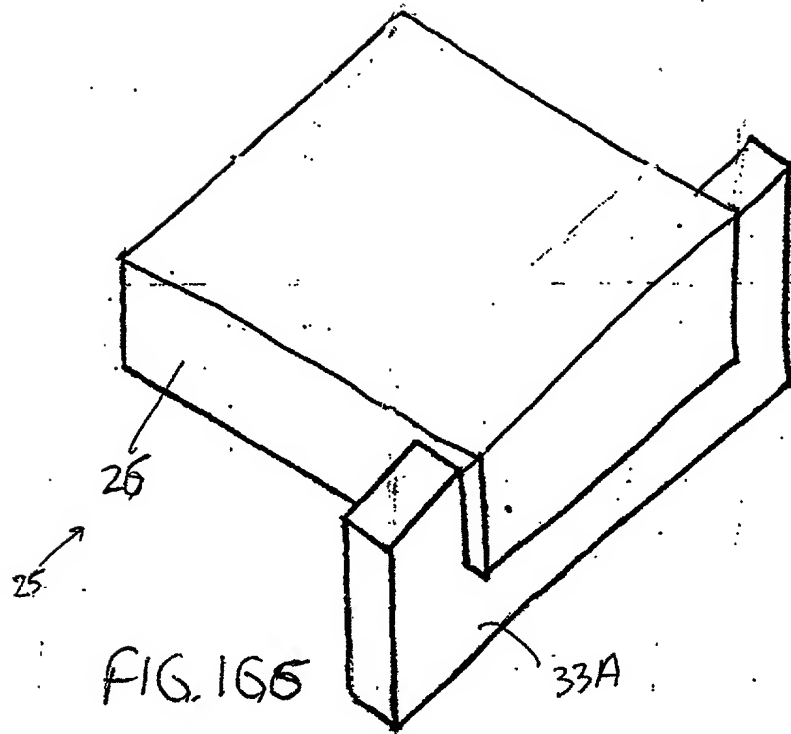


FIG. 165

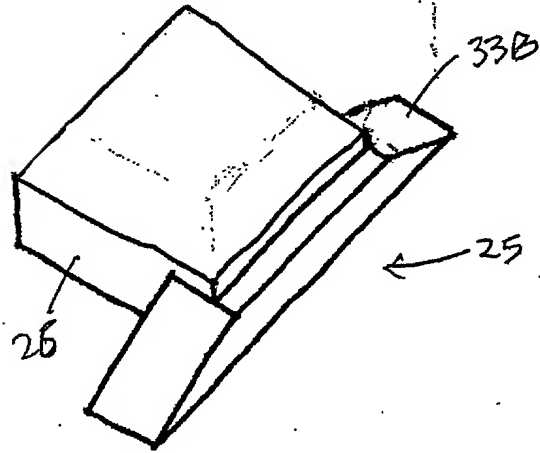


FIG. 167

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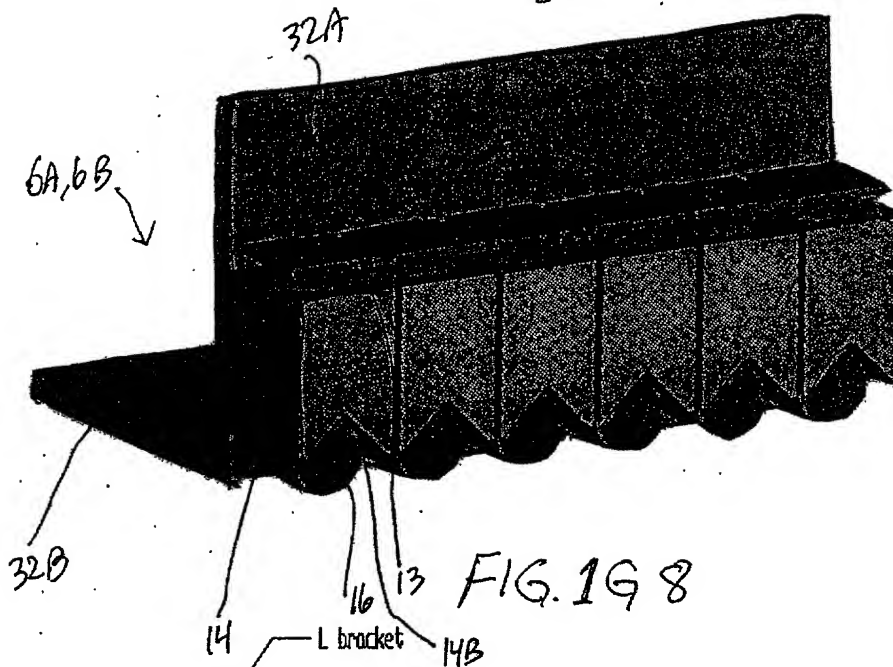


FIG. 1G8

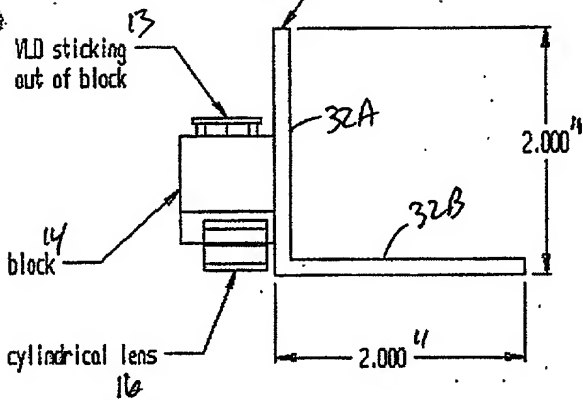


FIG. 1G9

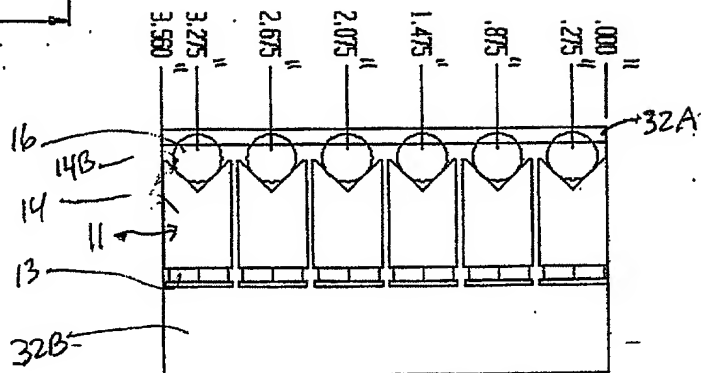
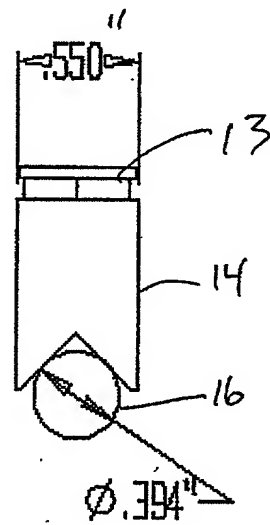
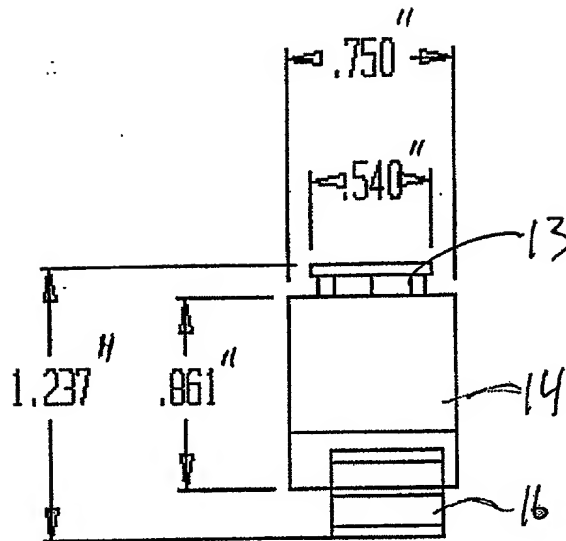


FIG. 1G10

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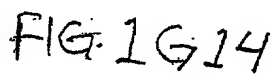
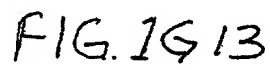


FIG. 1G15A

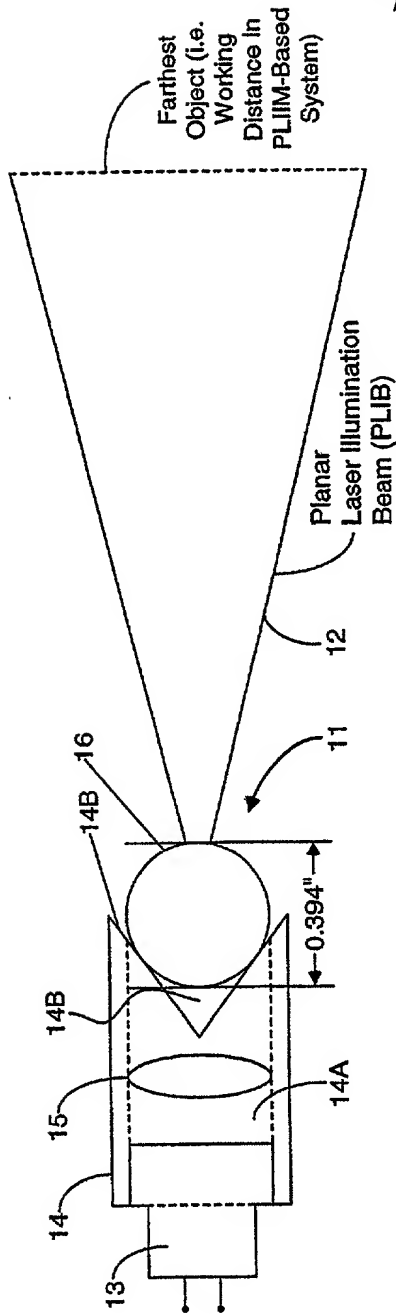


FIG. 1G15A

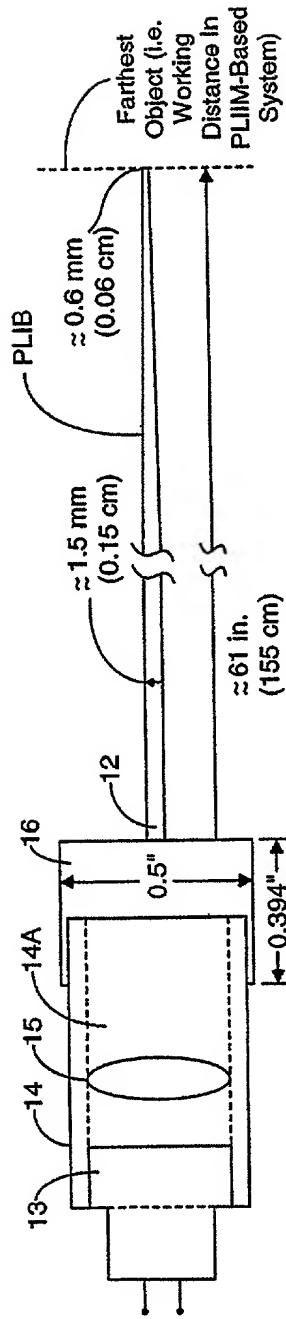


FIG. 1G15B

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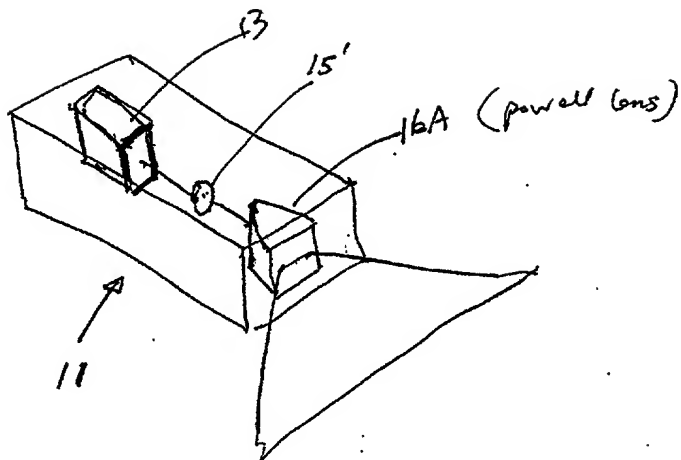


FIG. 1G.16A

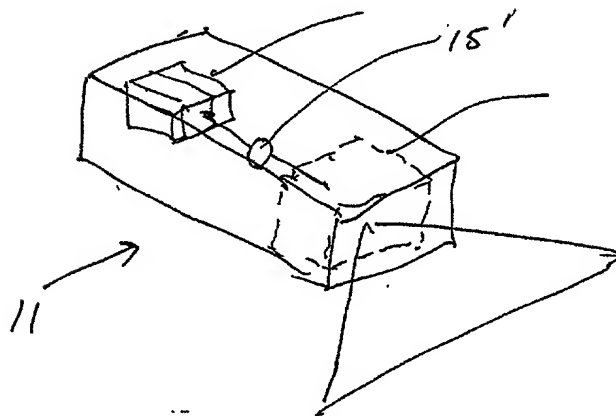


FIG. 1G.16B

• PLIM w/
power lens

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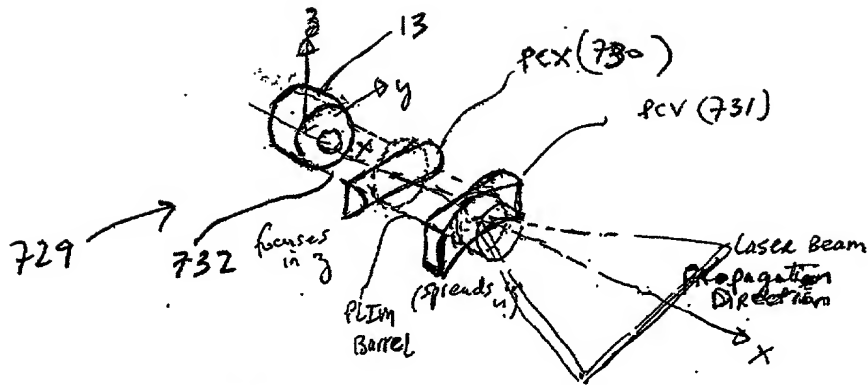


FIG. 16.17A

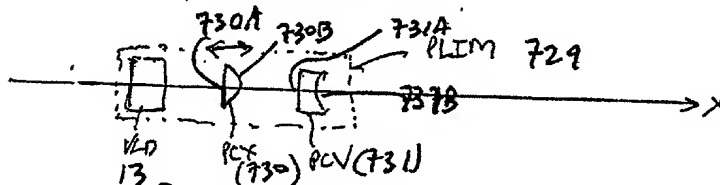


FIG. 16.17B

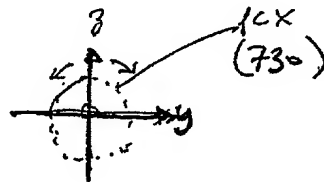


FIG. 16.17C

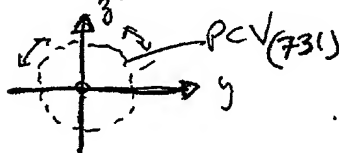


FIG. 16.17D



FIG. 16.17E

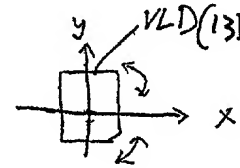
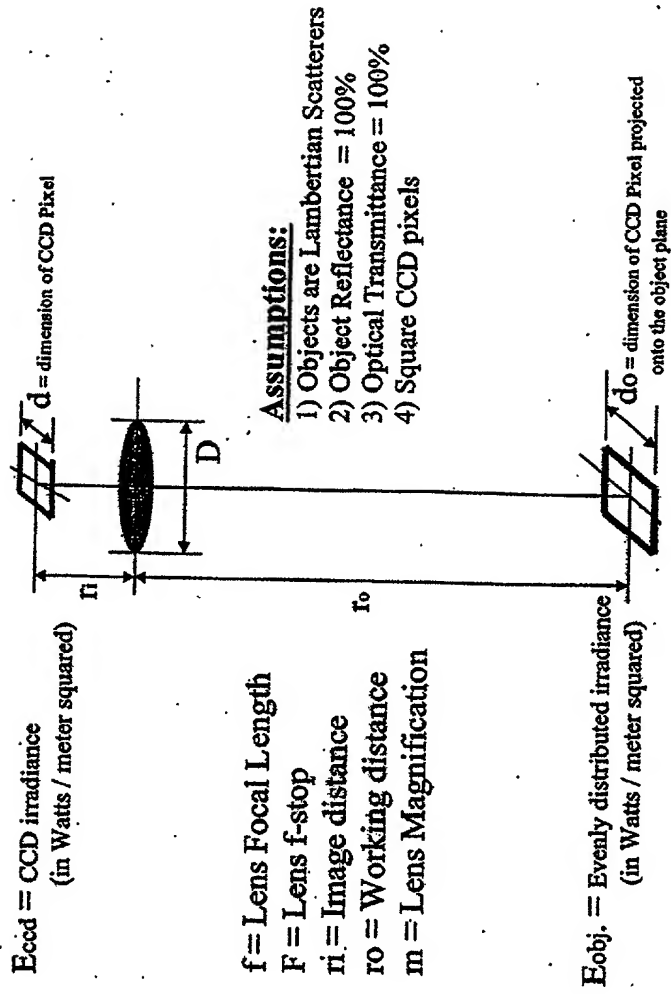


FIG. 16.17F

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CCD-Based Scanner

FIG. 1H6

FIRST GENERALIZED METHOD
of Reducing Speckle-Noise
Patterns AT Image
Detection array of the
FPD Endsystem (3)

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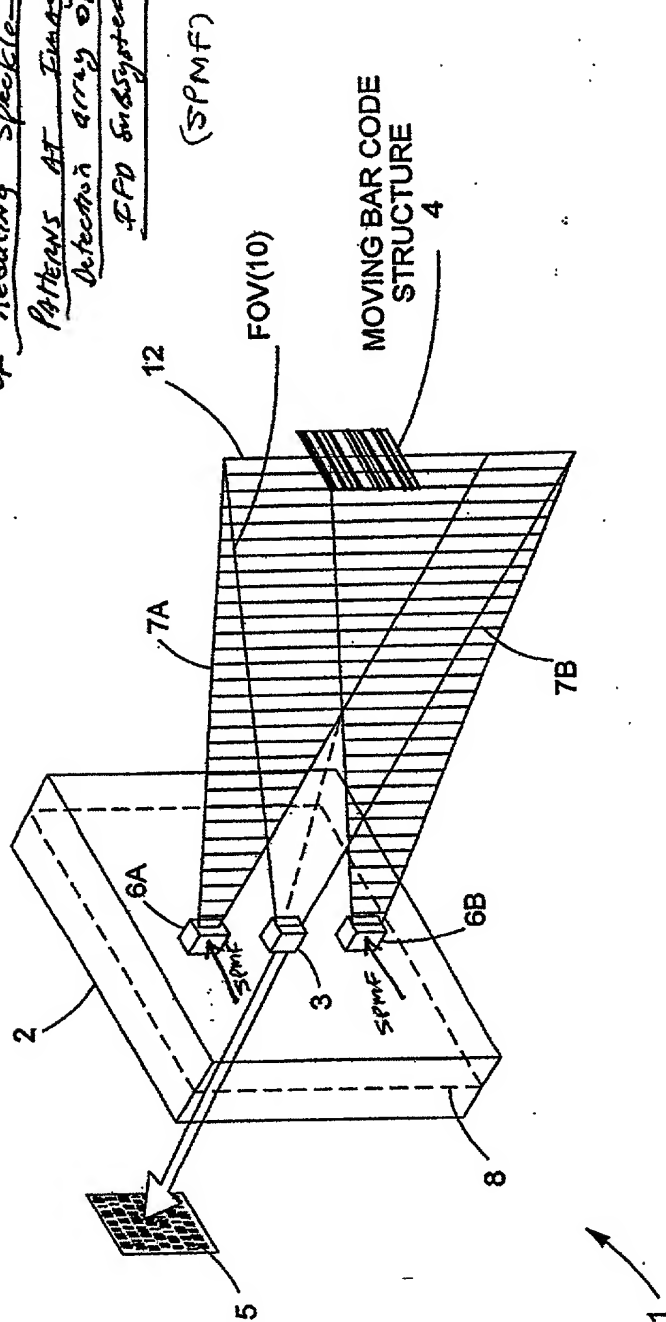
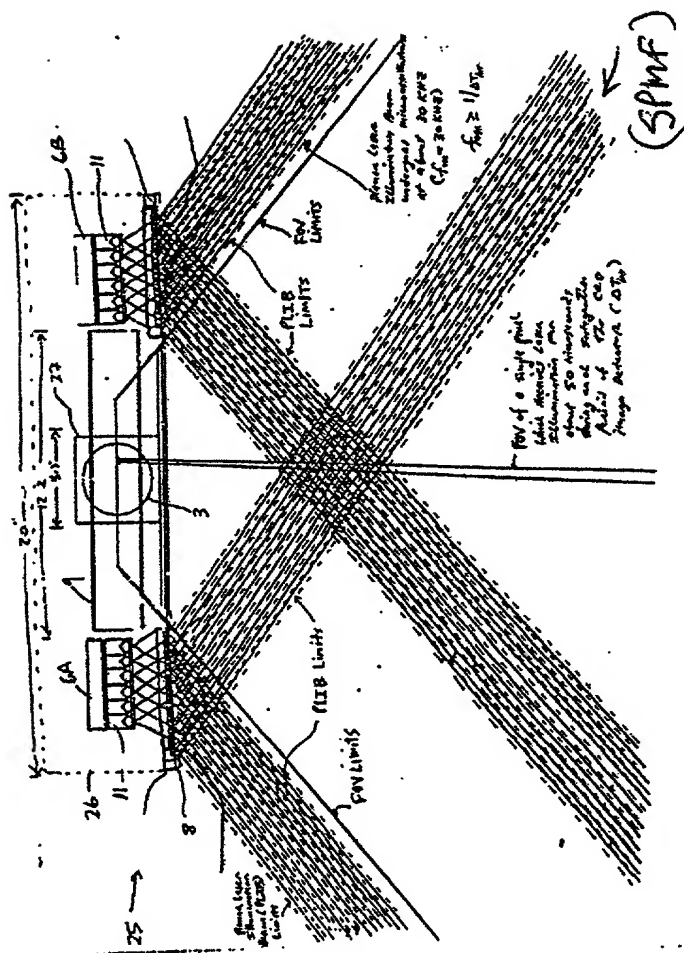


FIG. 1I1

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Prior to object illumination

FIG. 1I2A

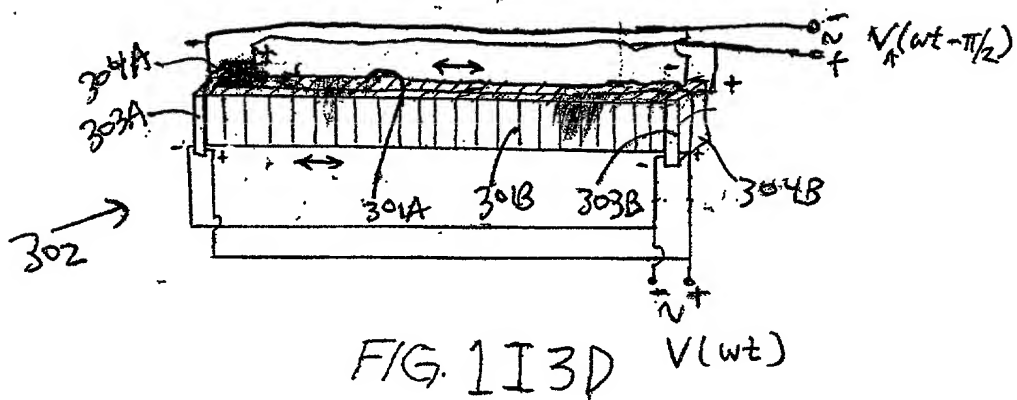
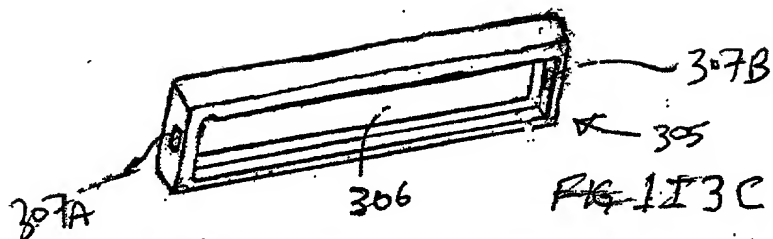
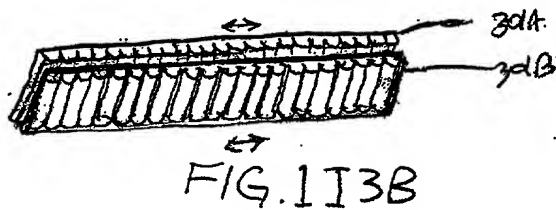
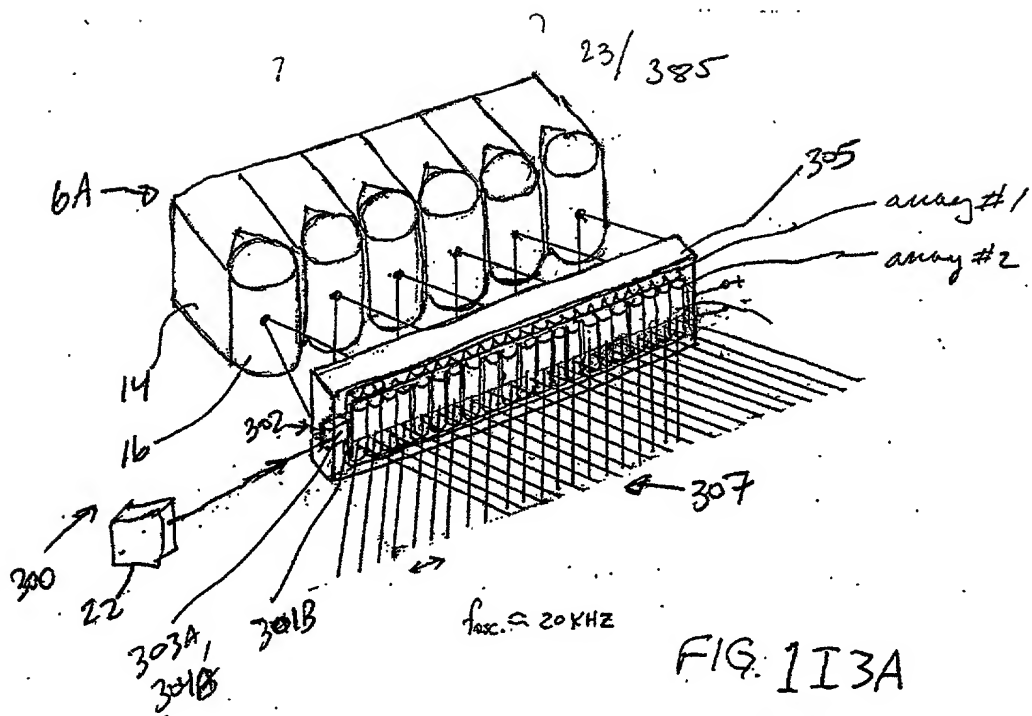
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The First Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

Prior to illumination of the target with the planar laser illumination beam (PLIB), modulate the spatial phase of the transmitted PLIB along the planar extent thereof according to a spatial phase modulation function (SPMF) so as to produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

Temporally average the numerous substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce the power of the speckle-noise pattern observed at the image detection array.

FIG. 1I2B



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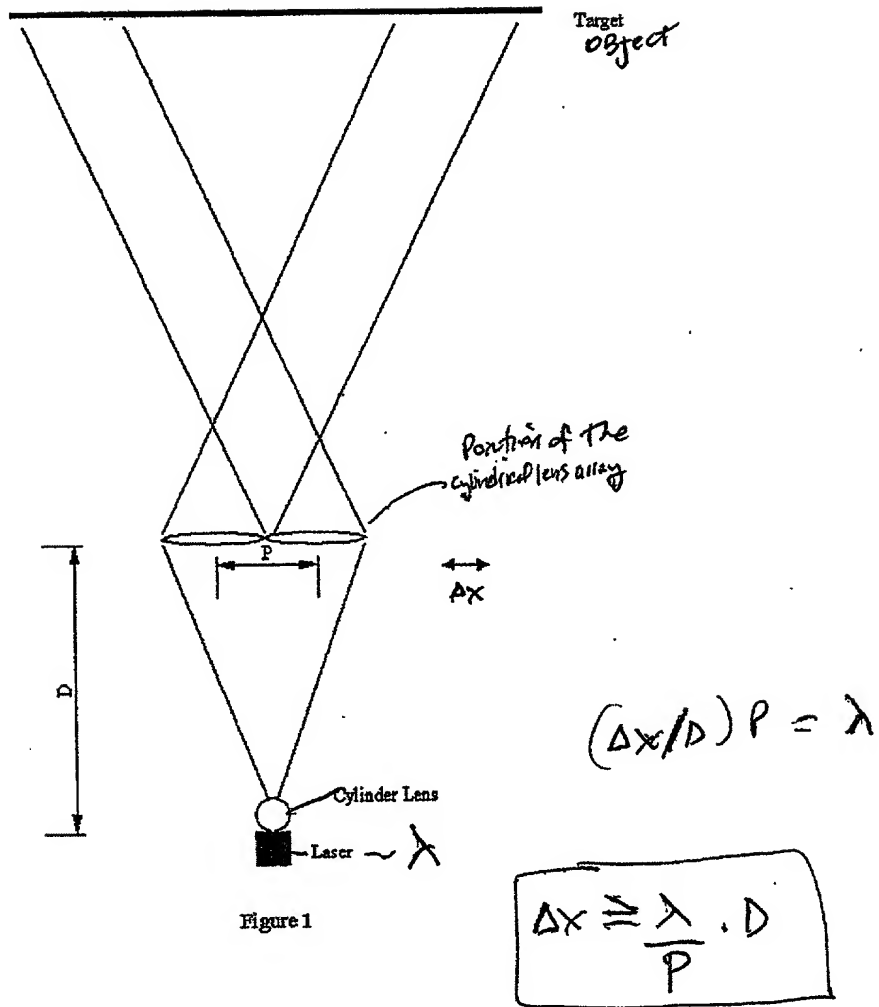
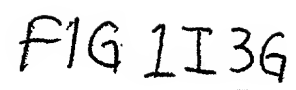
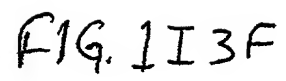
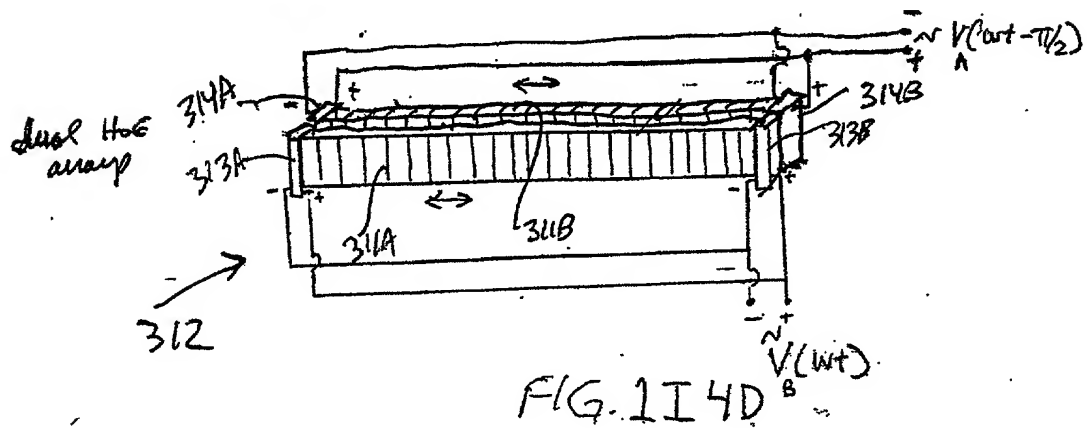
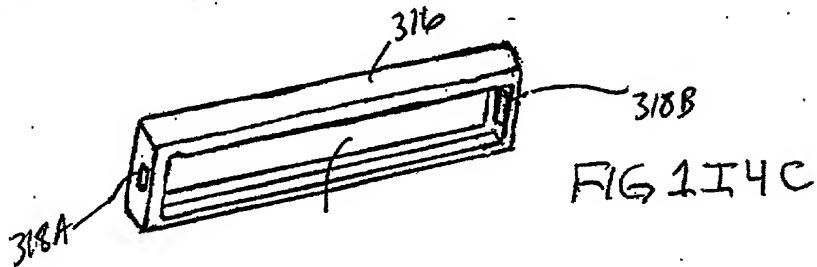
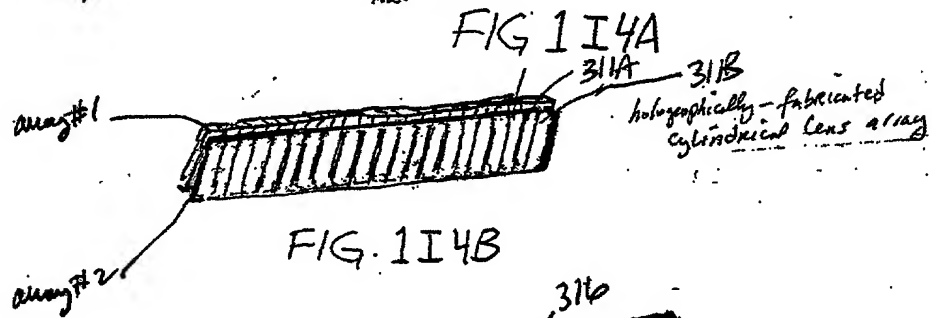
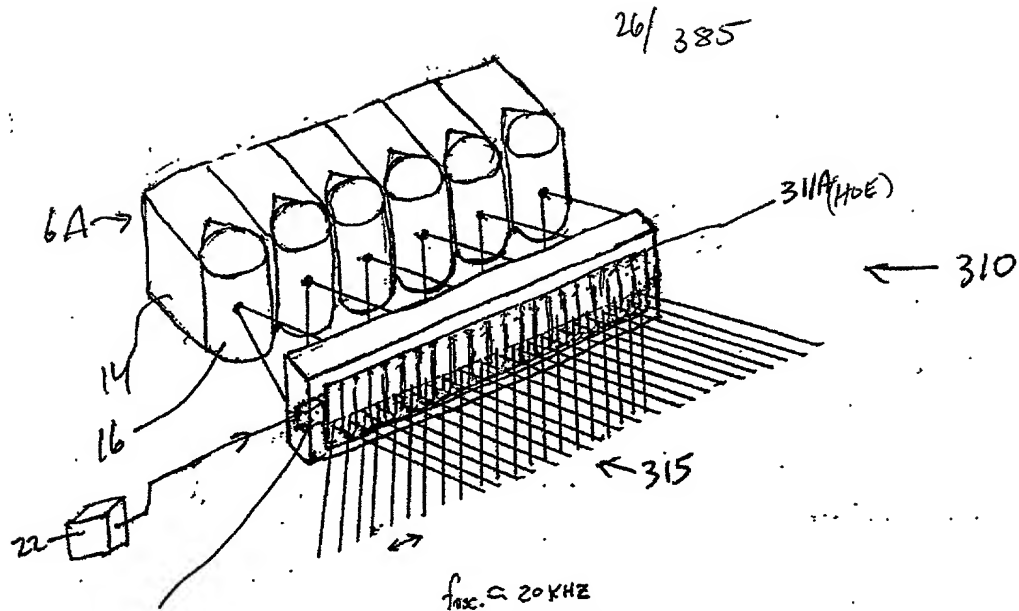
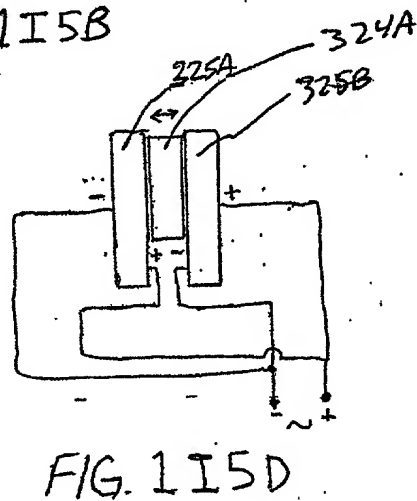
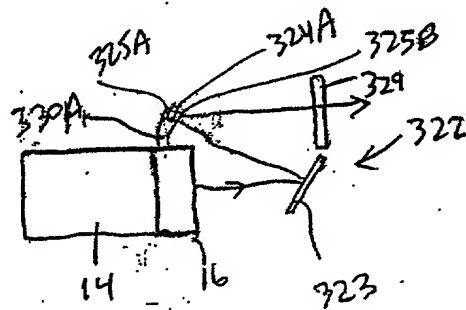
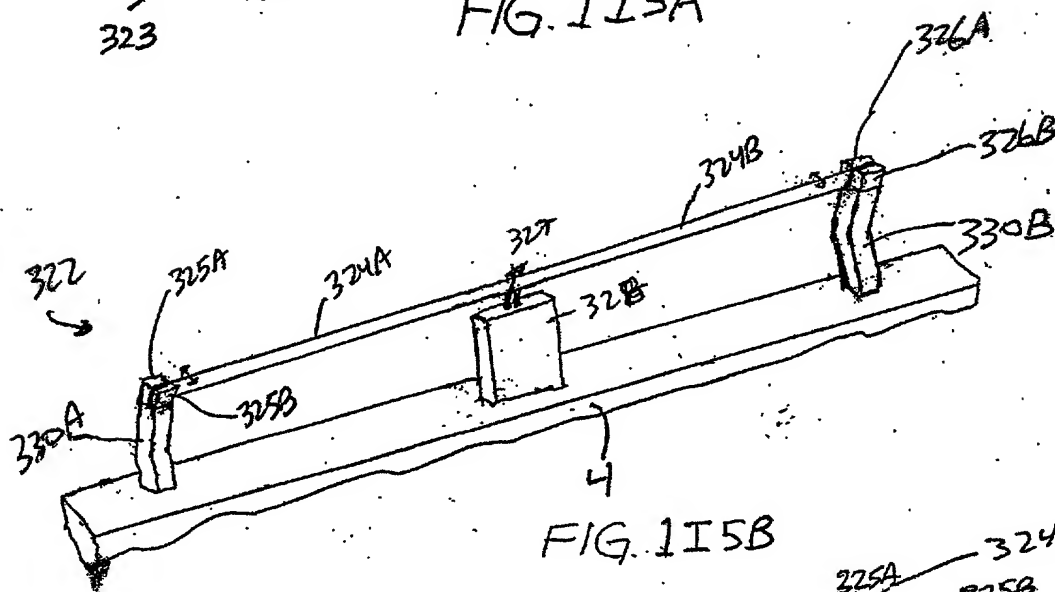
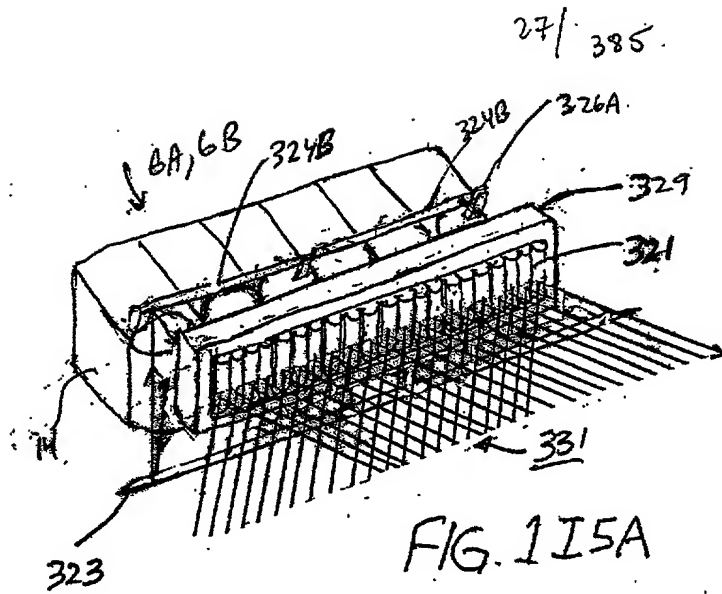


Figure 1

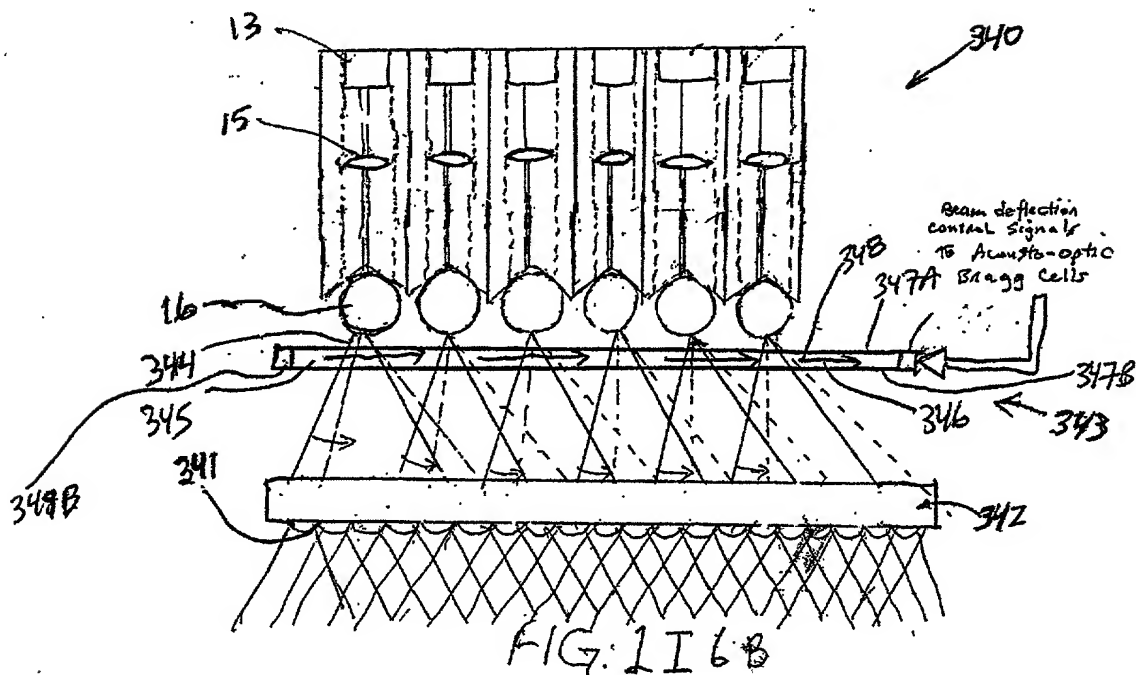
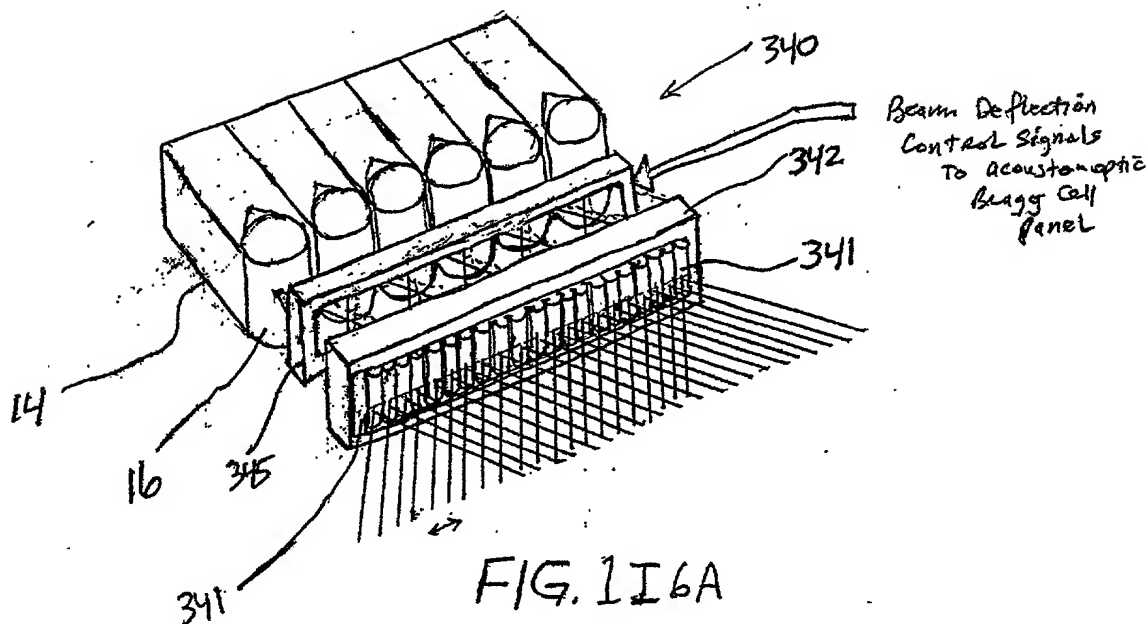
FIG. 1I3E

[illegible]

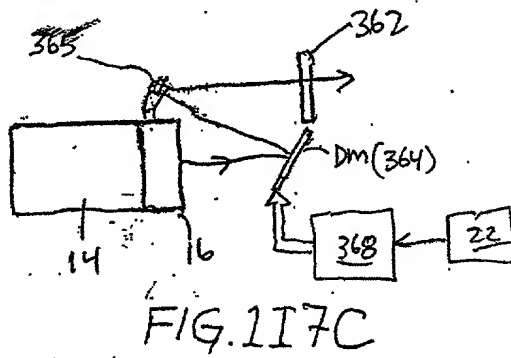
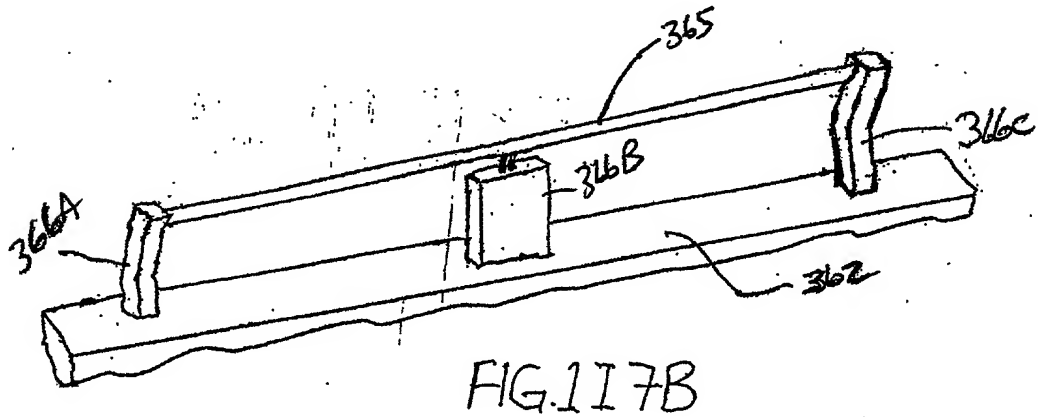
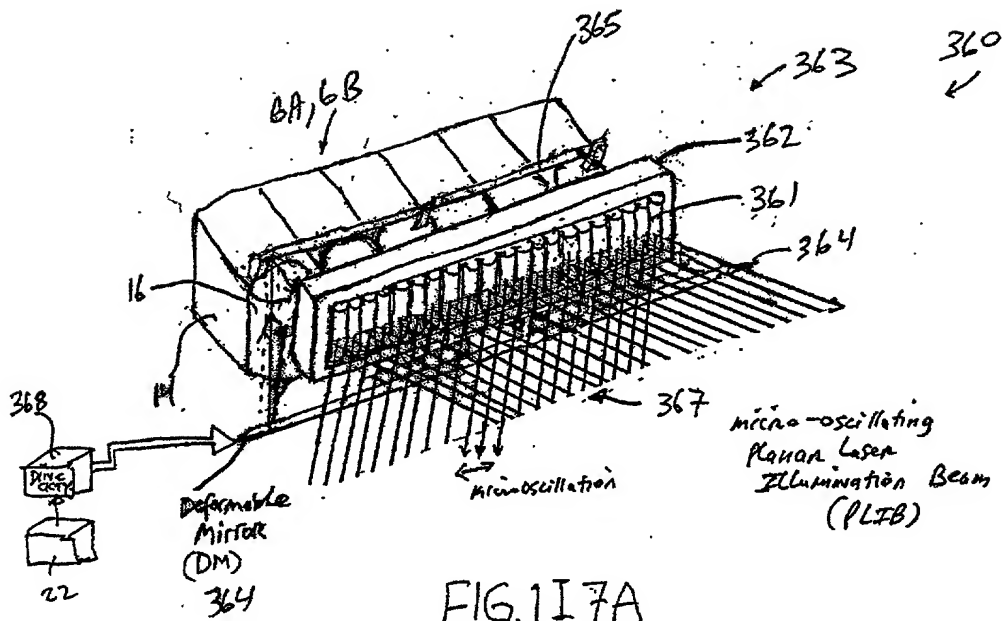


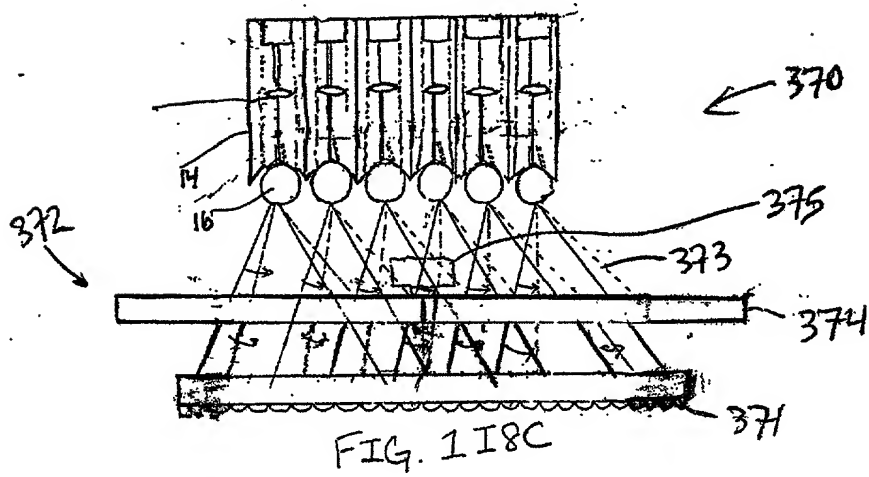
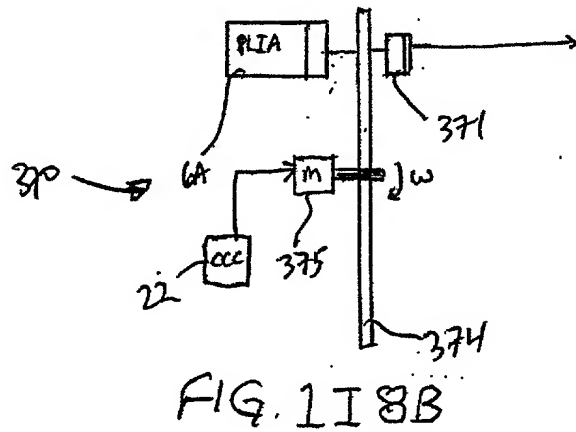
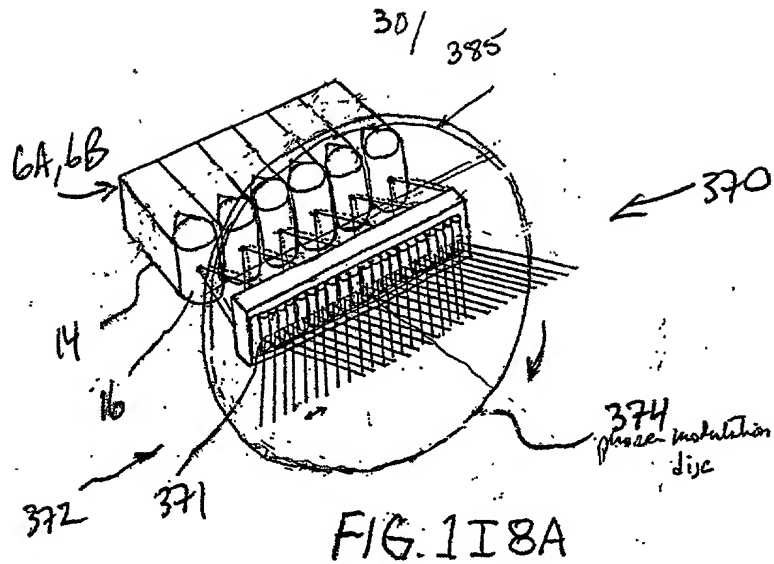


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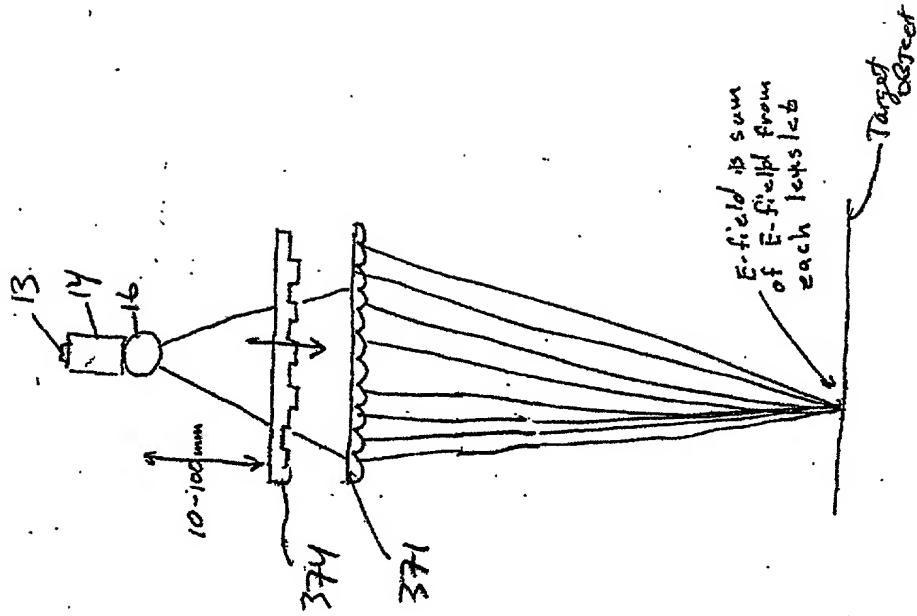


FIG 1I8E

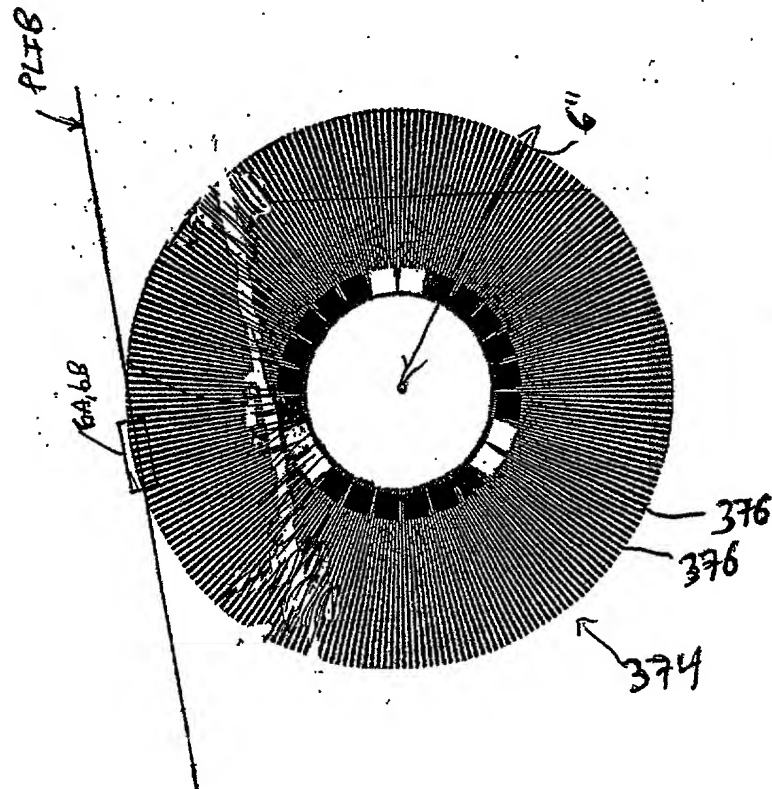
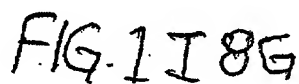


FIG 1I8D



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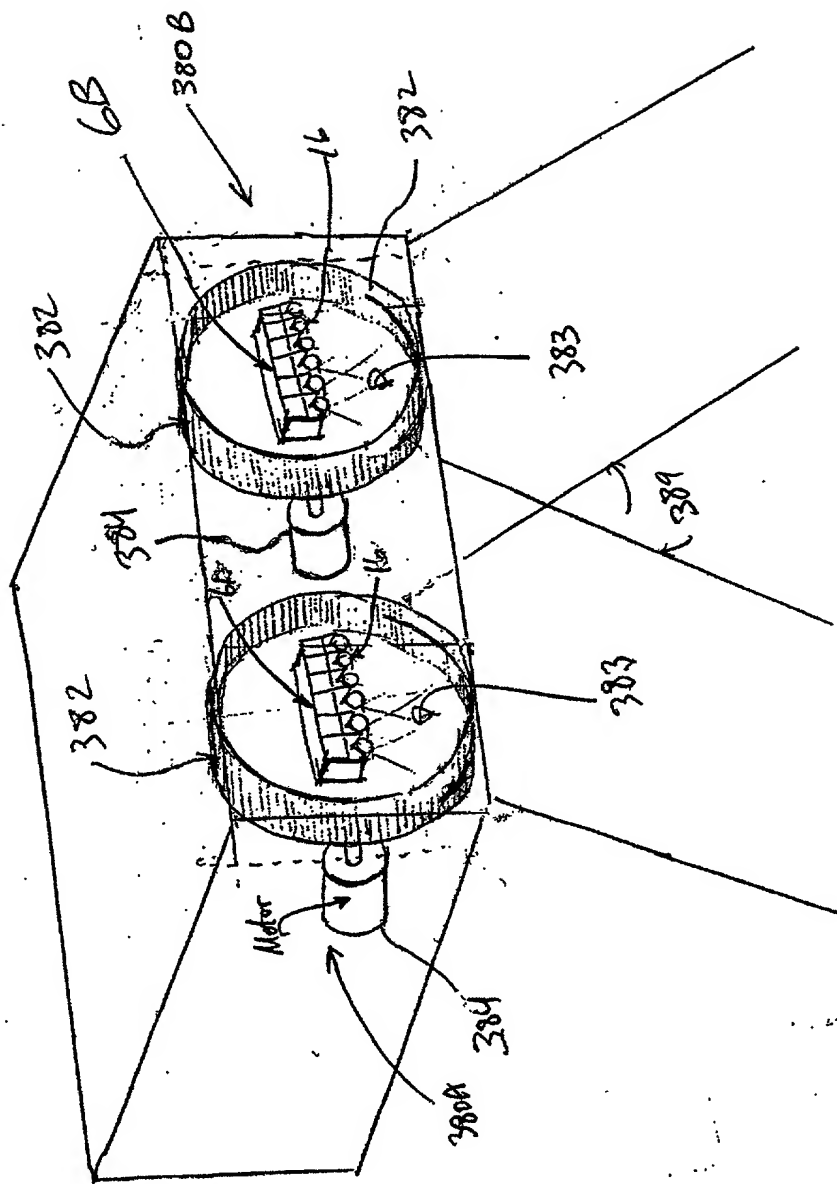


FIG. 119A

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Optical specifications:

- 30 cylindrical lens (lenses) per linear inch
- focal length ≈ 2.0 millimeters
- diameter of lens holder carousel ≈ 4 inches
- acrylic material

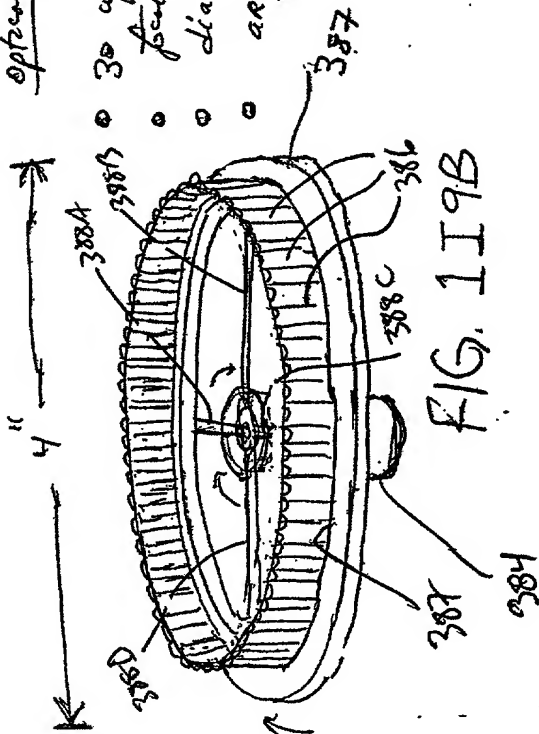


FIG. 1I9B

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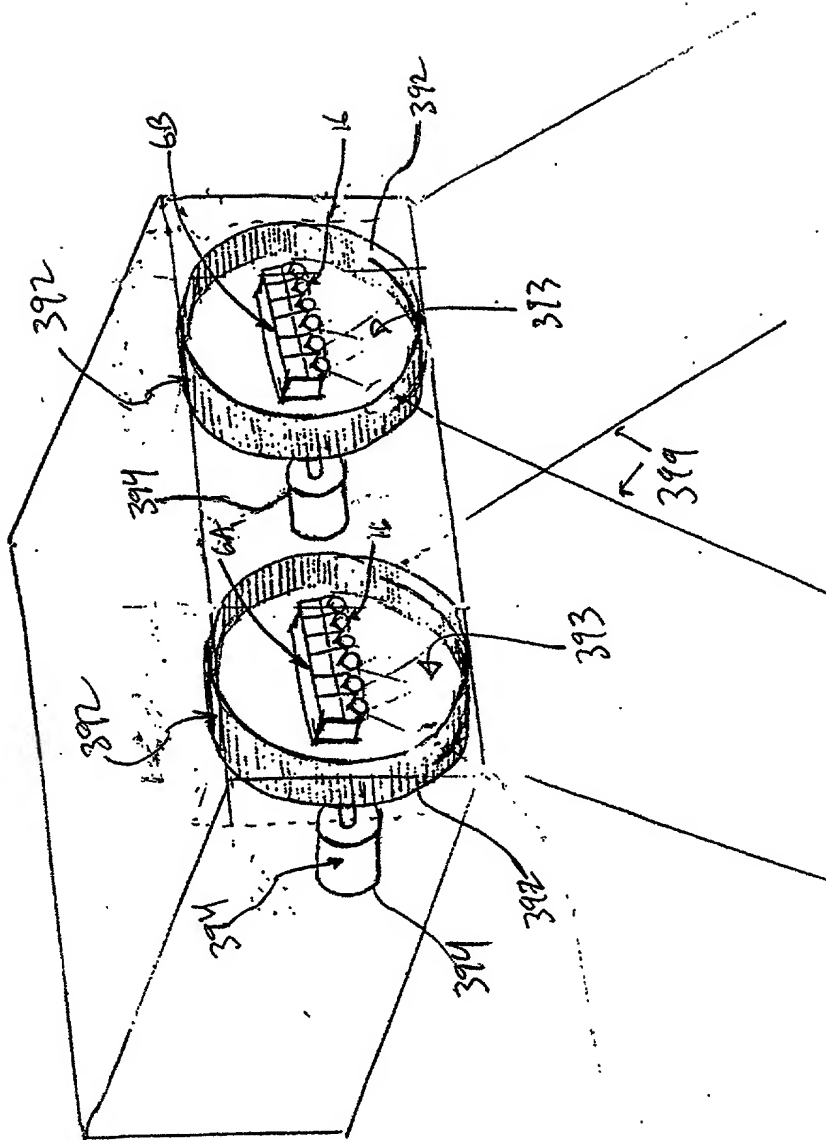


FIG. 1110A

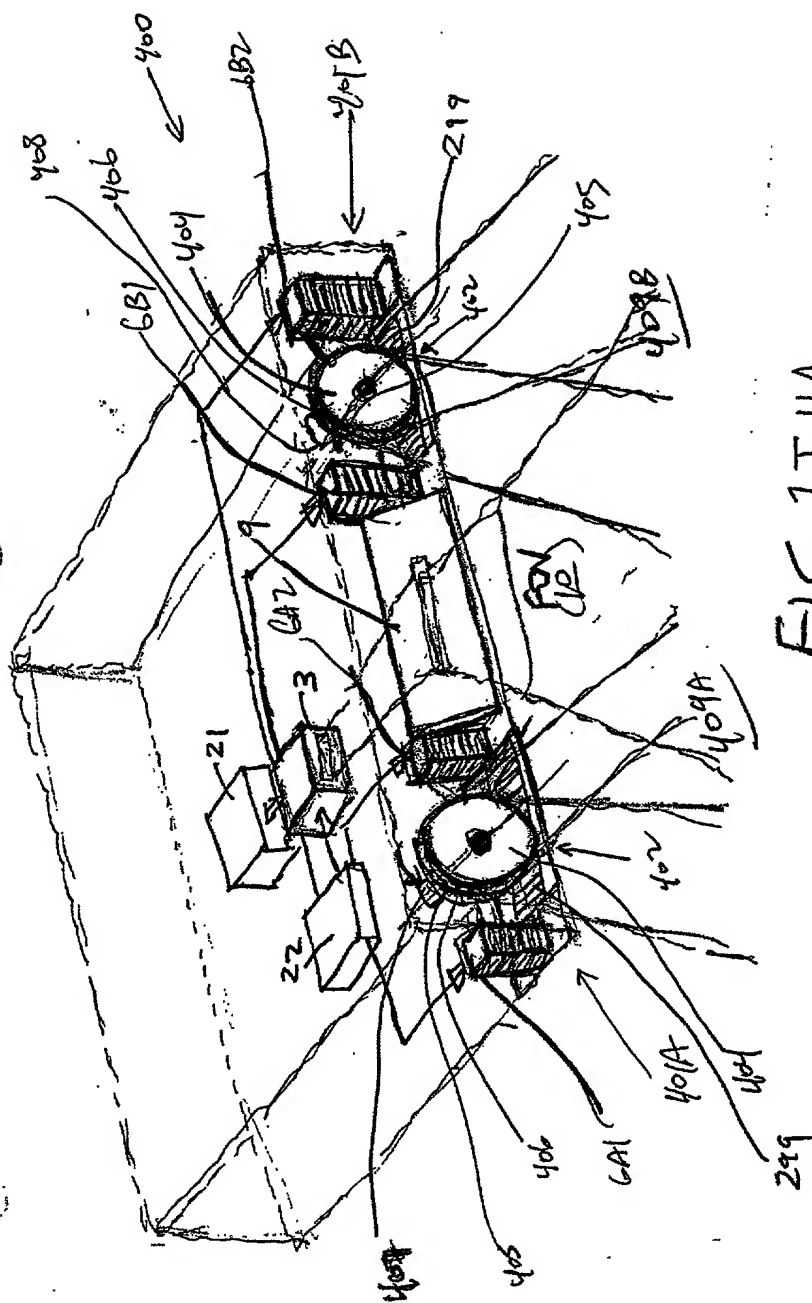


FIG. 1 IIA

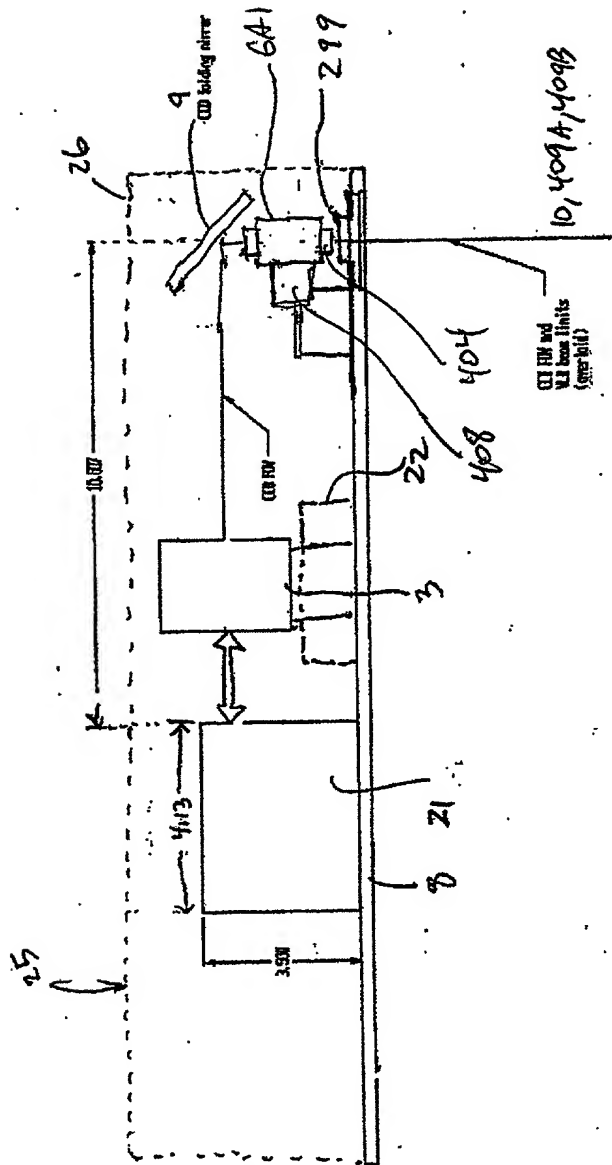


FIG. 1 I 1/B

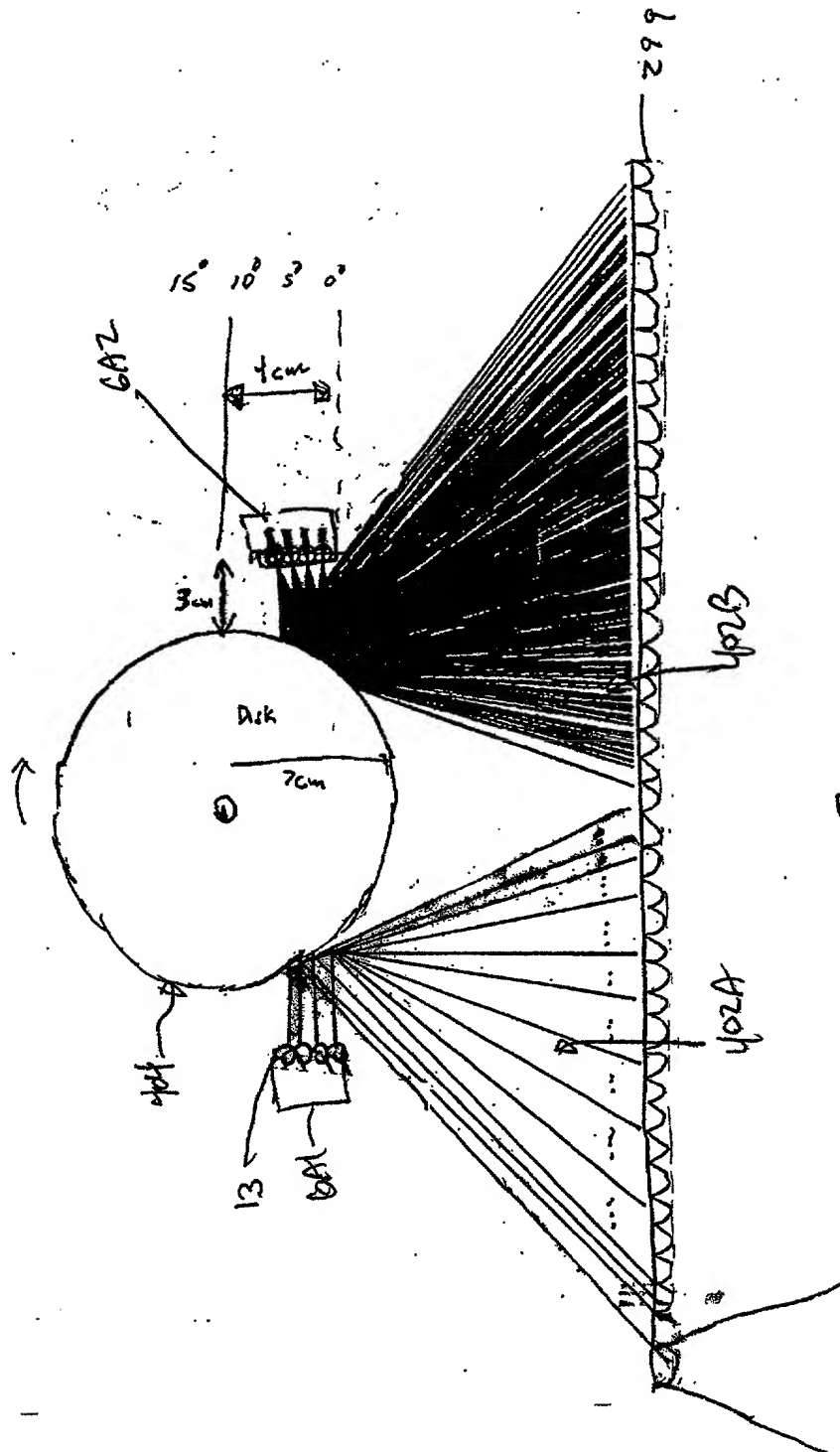


FIG. 111C

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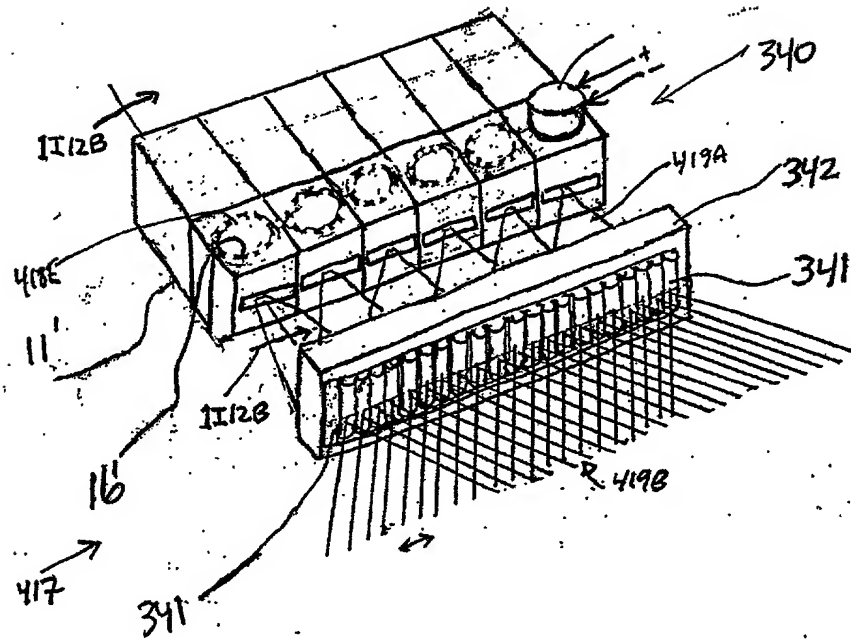


FIG. 1I12A

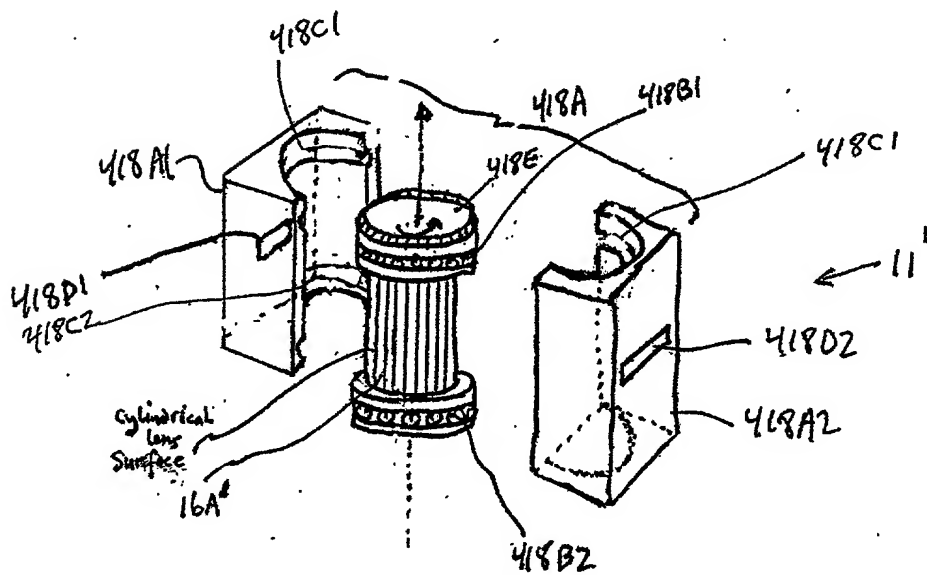


FIG. 1I12B

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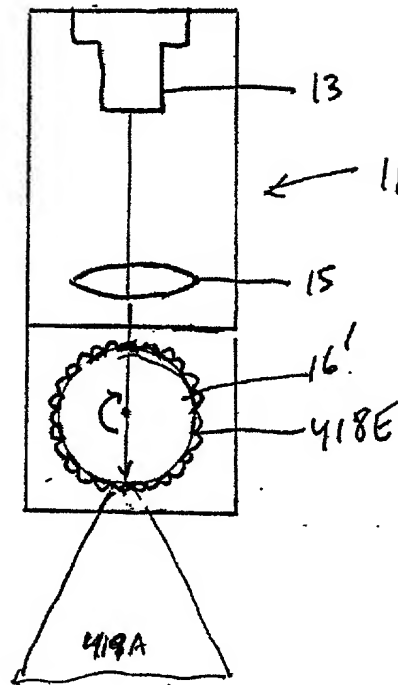


FIG. 1I12C

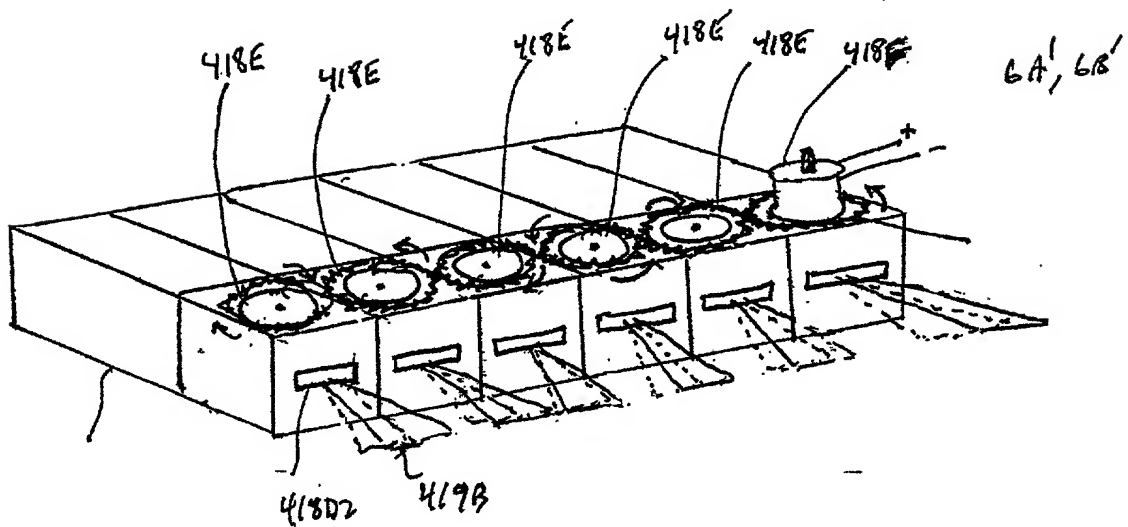


FIG. 1I12D

Second Generalized Method of
Reducing Speckle-Noise Patterns
at Image Detection Array
of the FPD Subsystem (3)

(TIME)

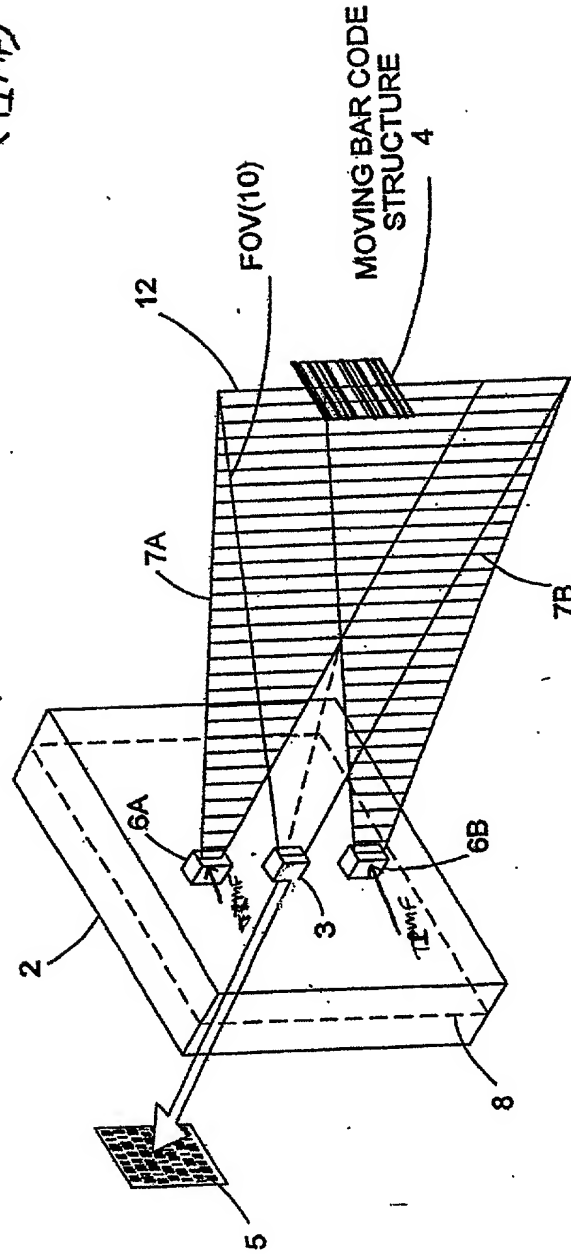


FIG. 11/13

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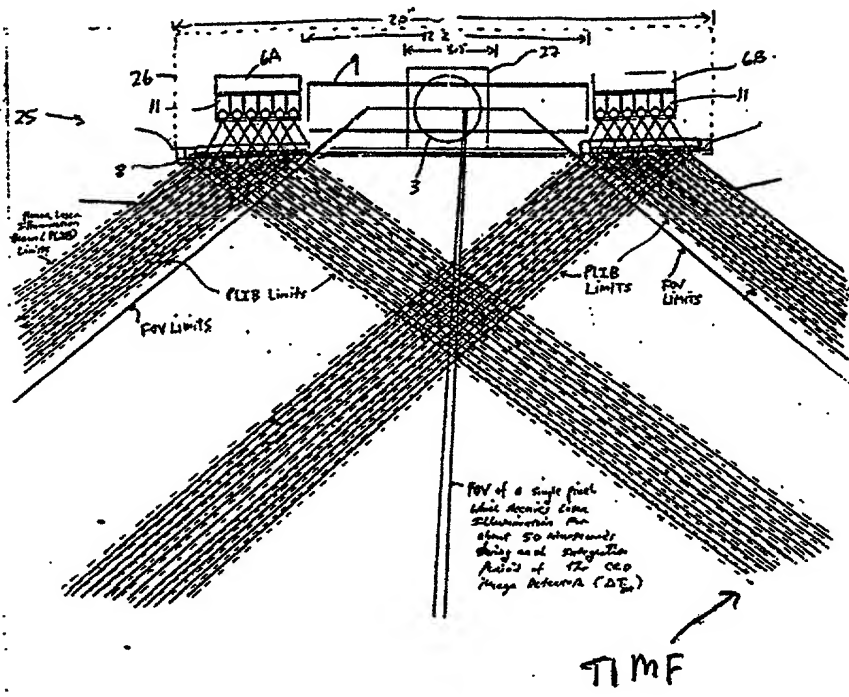


FIG. 1 I 13A

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The Second Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

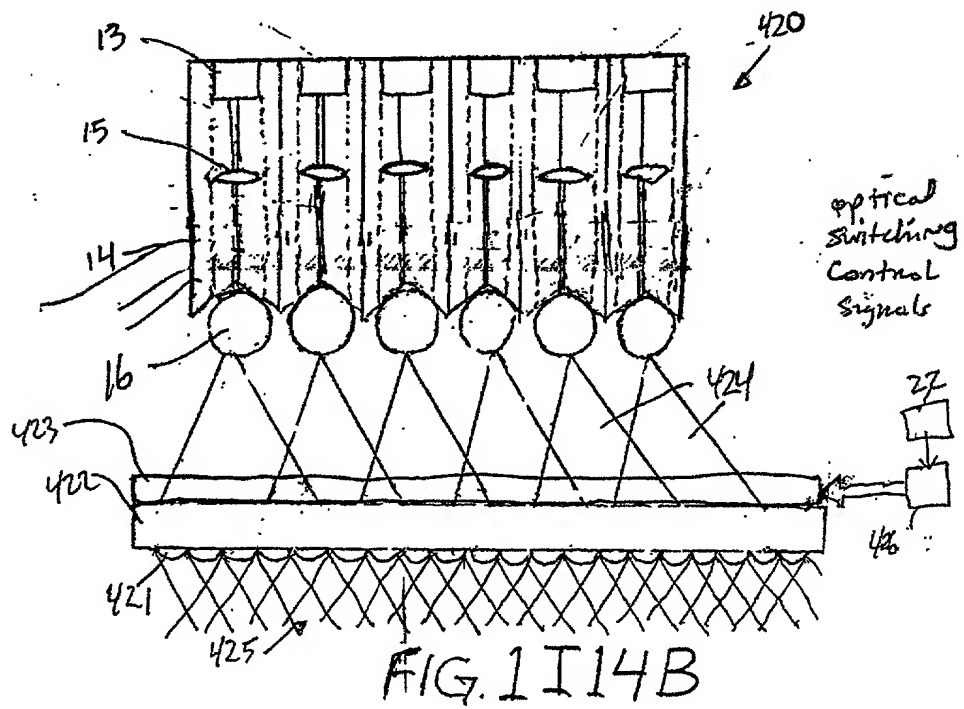
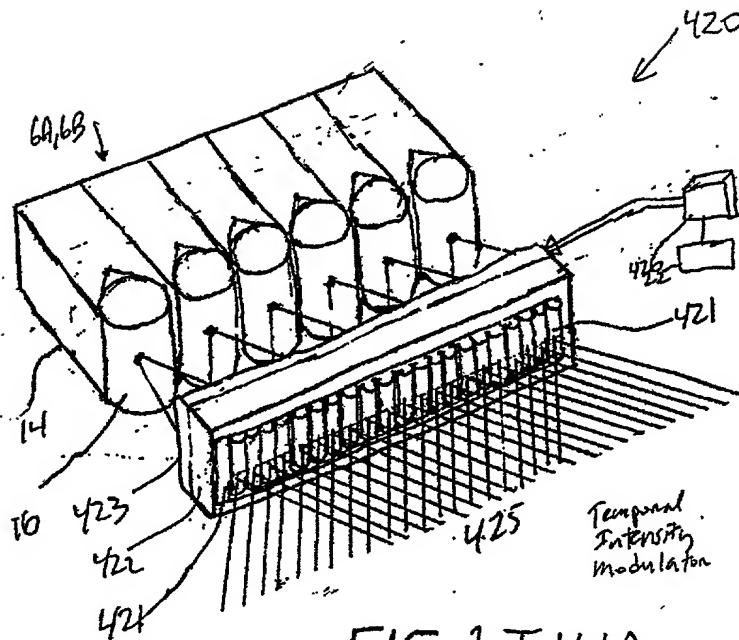
Prior to illumination of the target with the planar laser illumination beam (PLIB), modulate the temporal intensity of the transmitted PLIB along the planar extent thereof according to a temporal intensity modulation function (TIMF) so as to

produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

Temporally average the numerous substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce power of the speckle-noise pattern observed at the image detection array.

FIG. 1I13B

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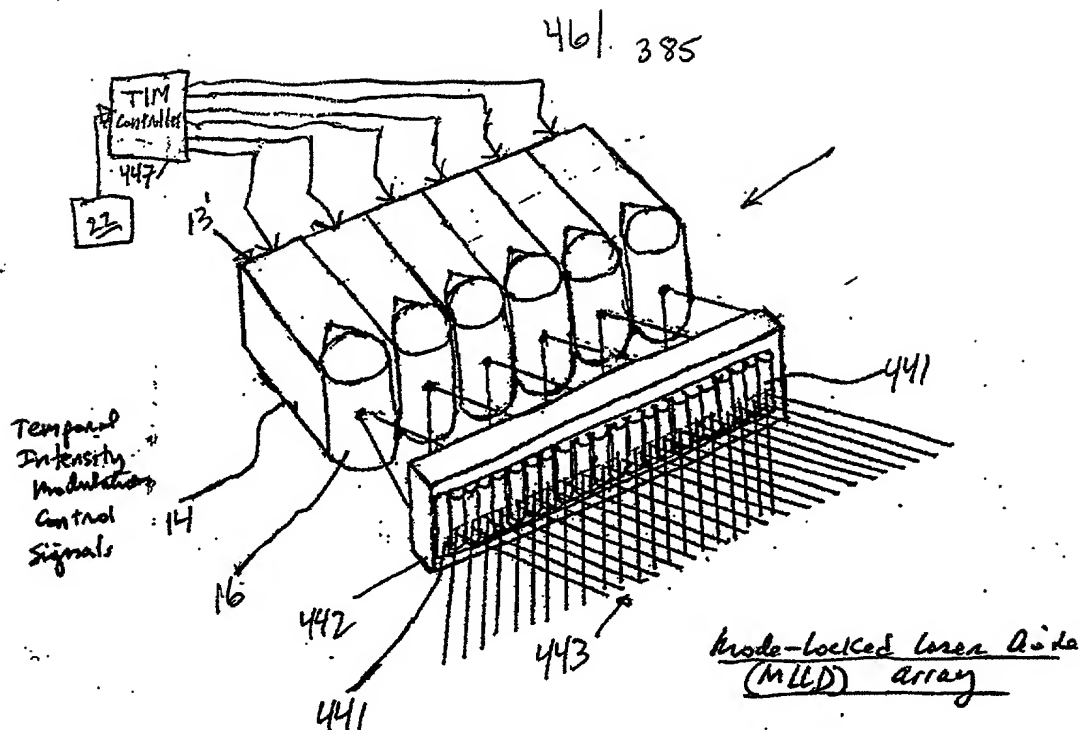


FIG. 1I15A

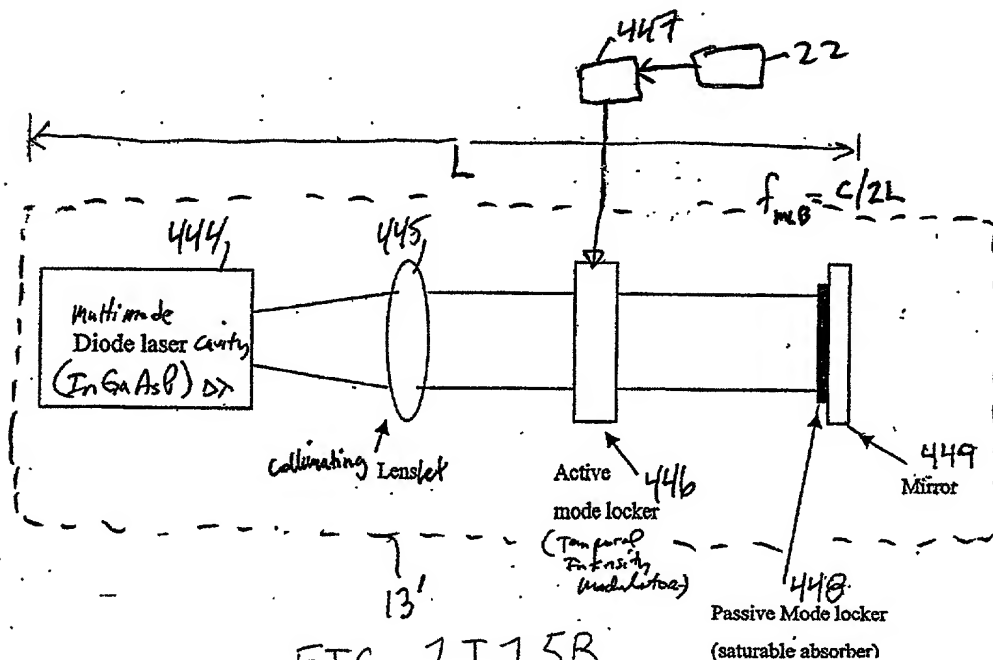


FIG. 1I15B

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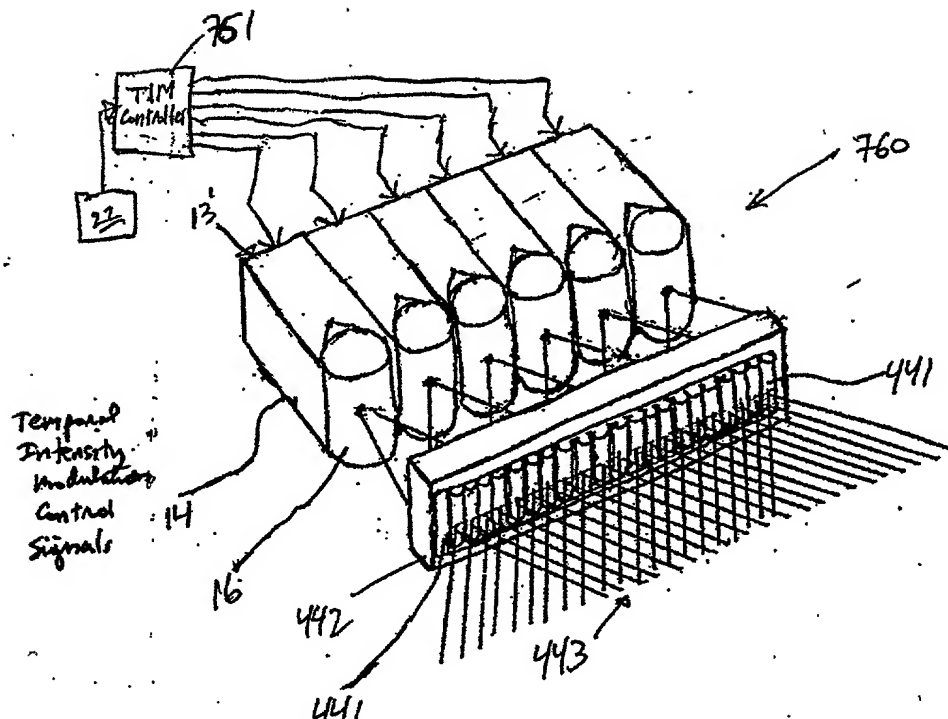


FIG. 1I15C

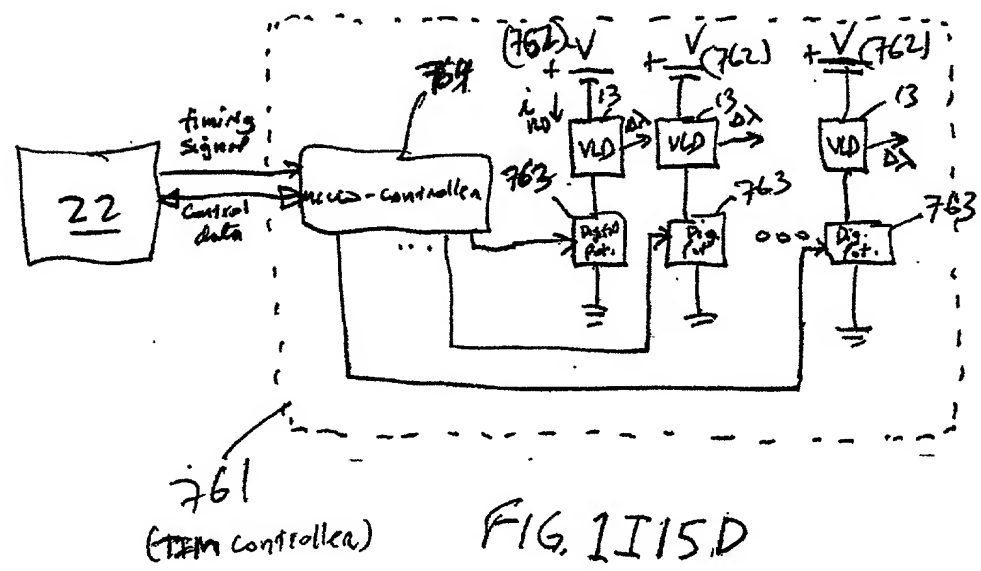


FIG. 1I15D

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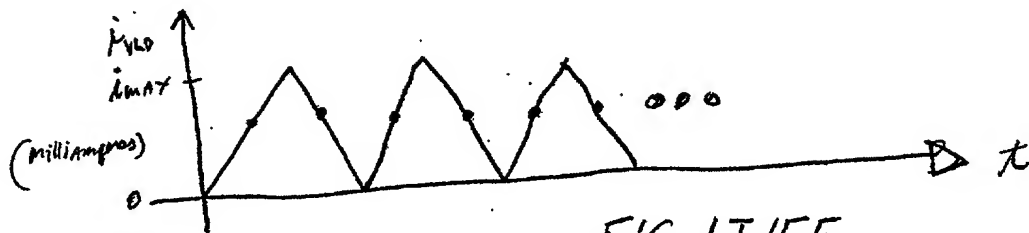


FIG. 1I15E

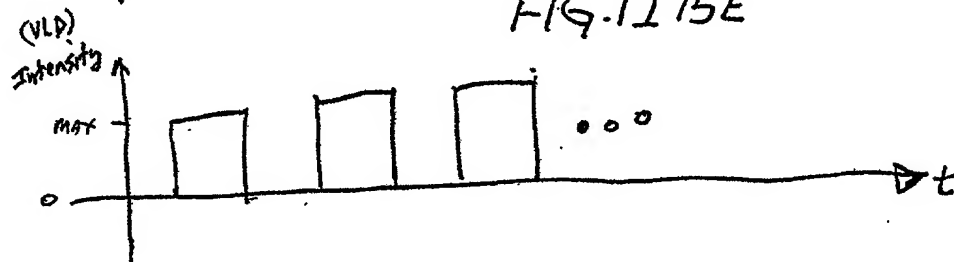


FIG. 1I15E

Third Generalized Method of
Reducing Speckle-Noise Patterns
at Image Detection Array
of the FFD Subsystem (3)

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(TIME)

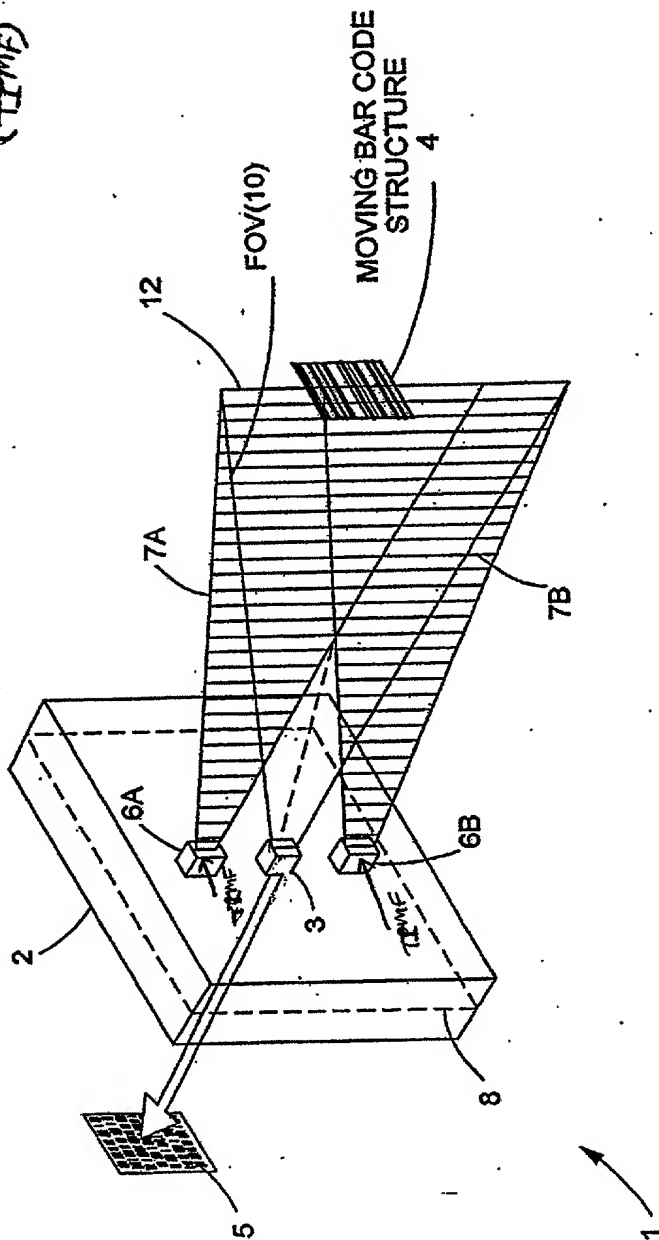


FIG. 1116

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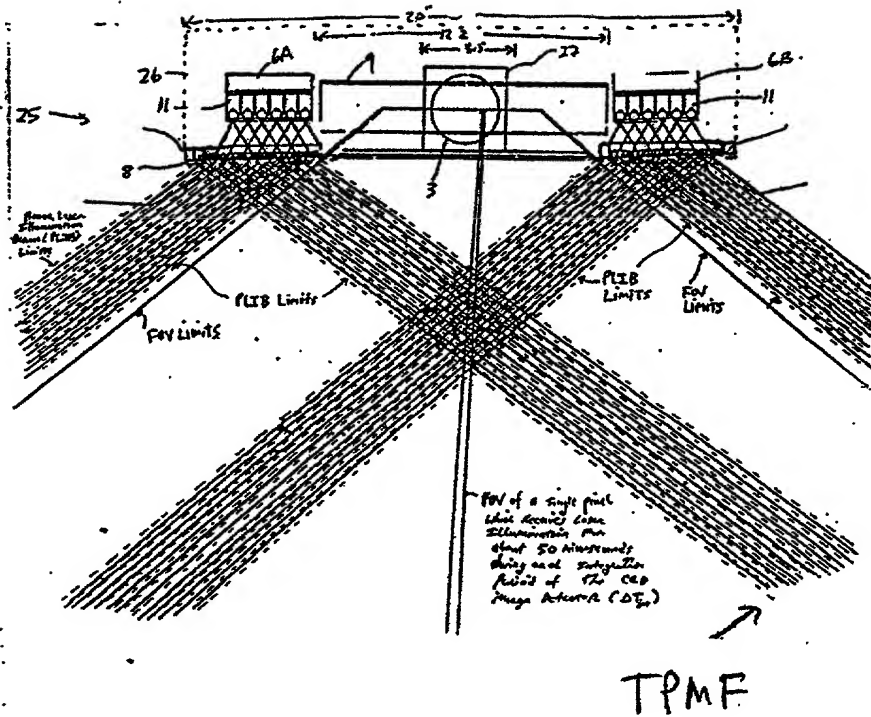


FIG. 1 I 16A

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Third Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

Prior to illumination of the target with the planar laser illumination beam (PLIB), modulate the temporal *phase* of the transmitted PLIB along the ~~planar extent thereof~~ according to a *temporal phase* modulation function (TPMF) so as to:

produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

↓

Temporally average the numerous substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce power of the speckle-noise pattern observed at the image detection array.

FIG. 1I/6B

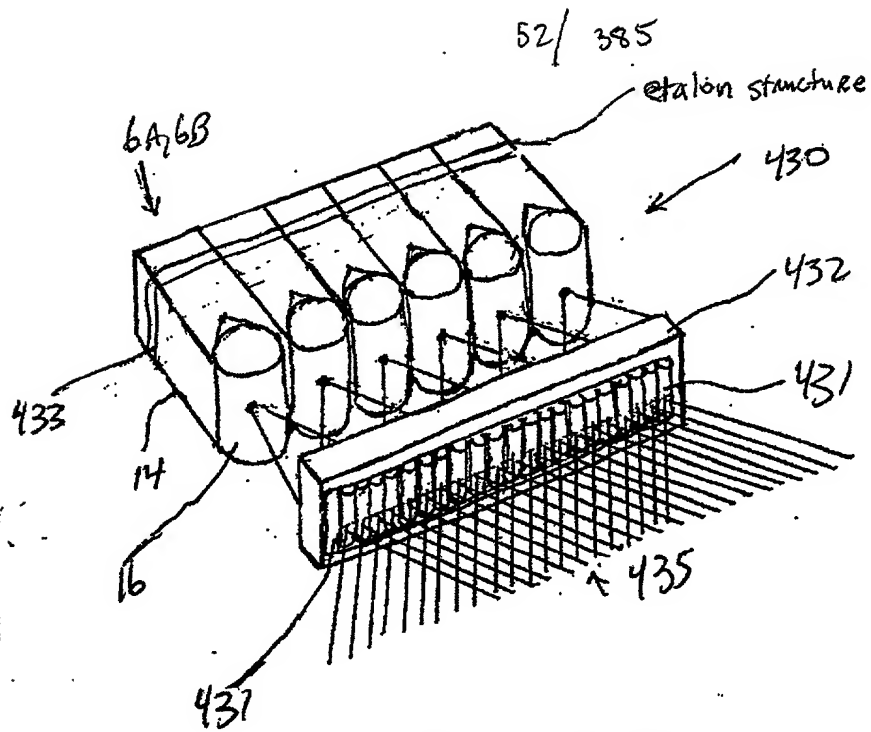


FIG. 1I17A

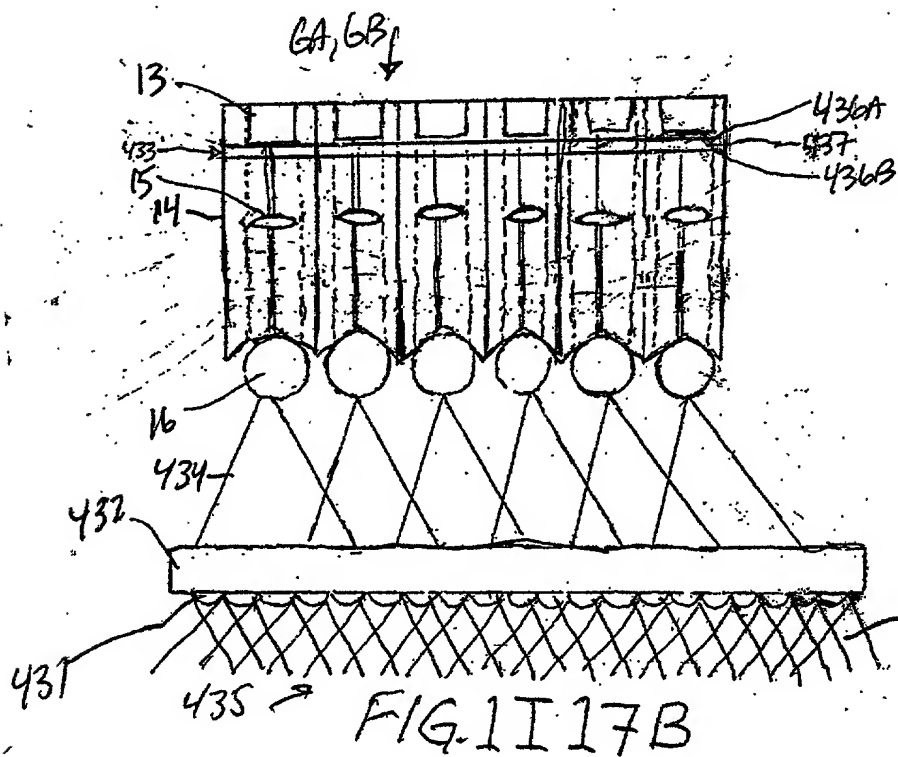
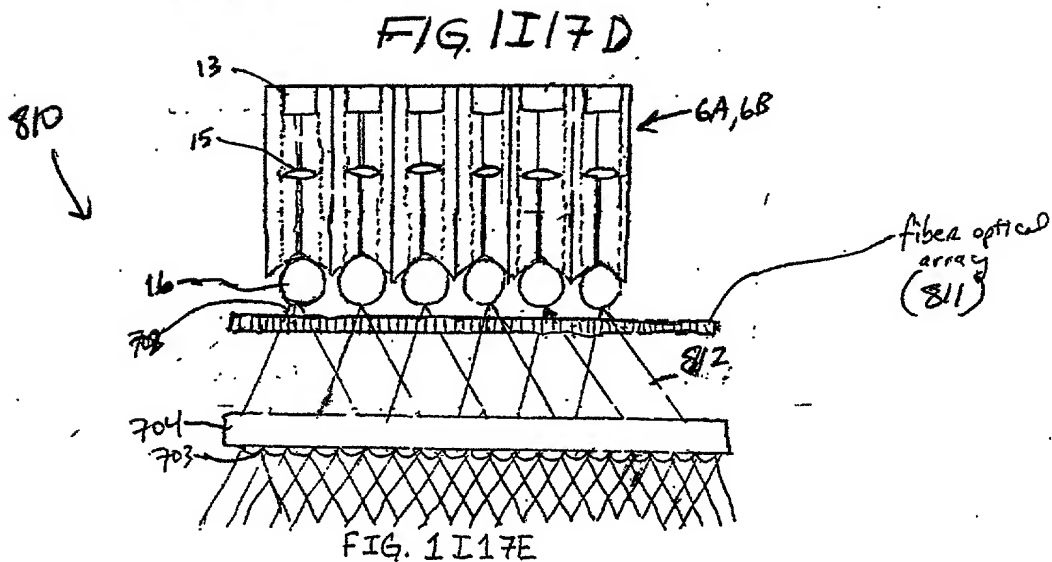
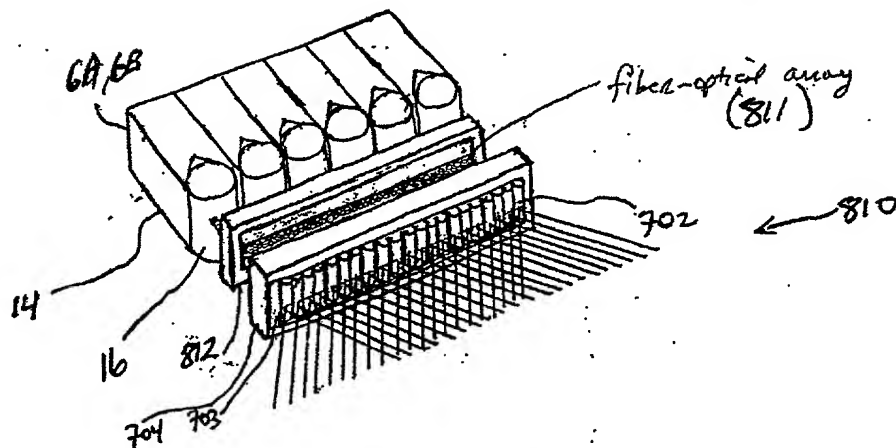
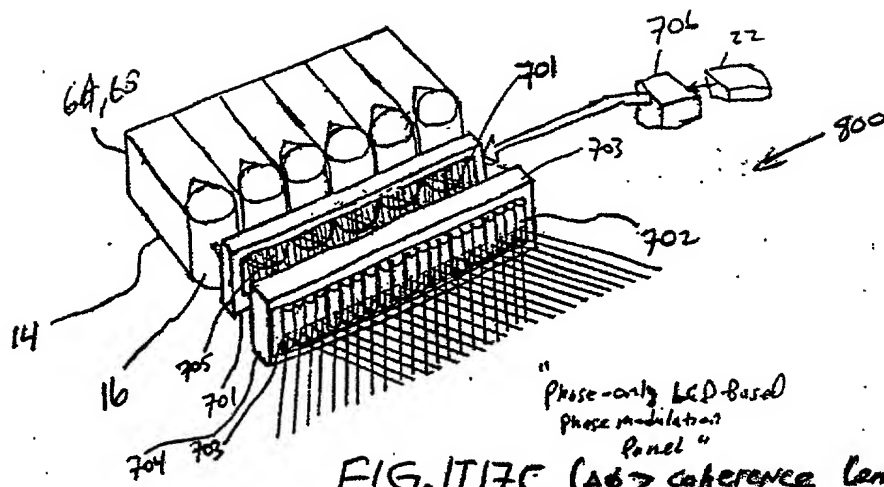


FIG. 1I17B

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Fourth Generalized Method of
Reducing Speckle-Noise Patterns
of Image Detection Array
of the FFO Subsystem (3)

(Temp)

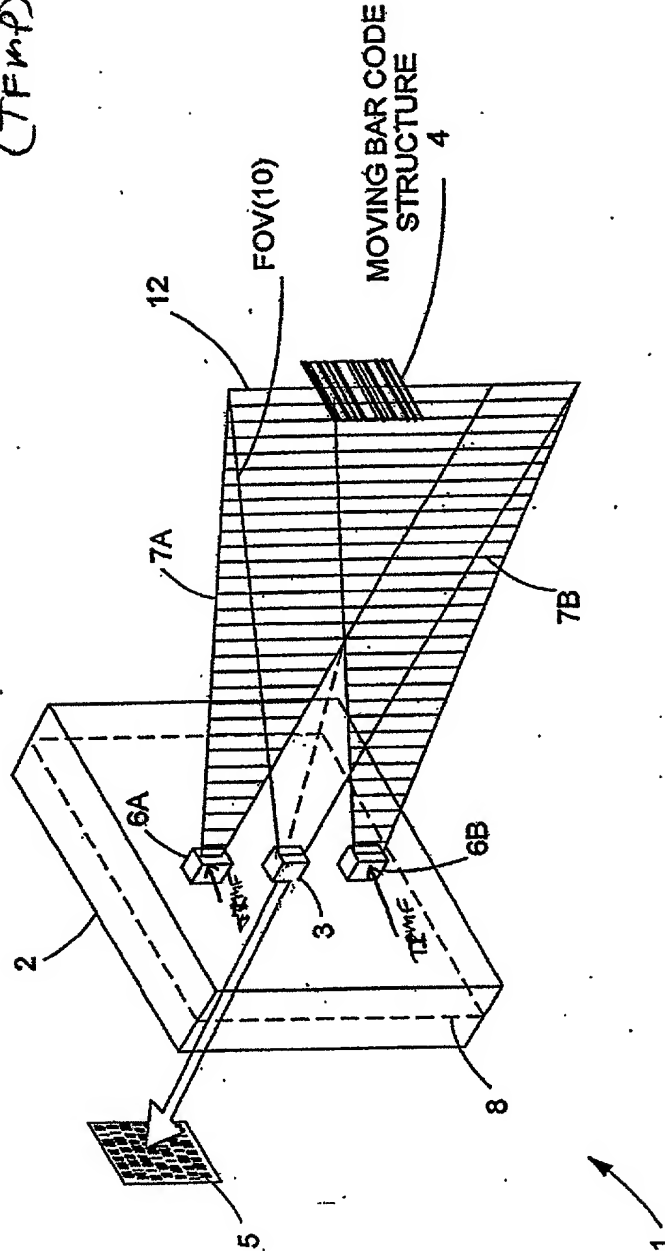


FIG. 1118

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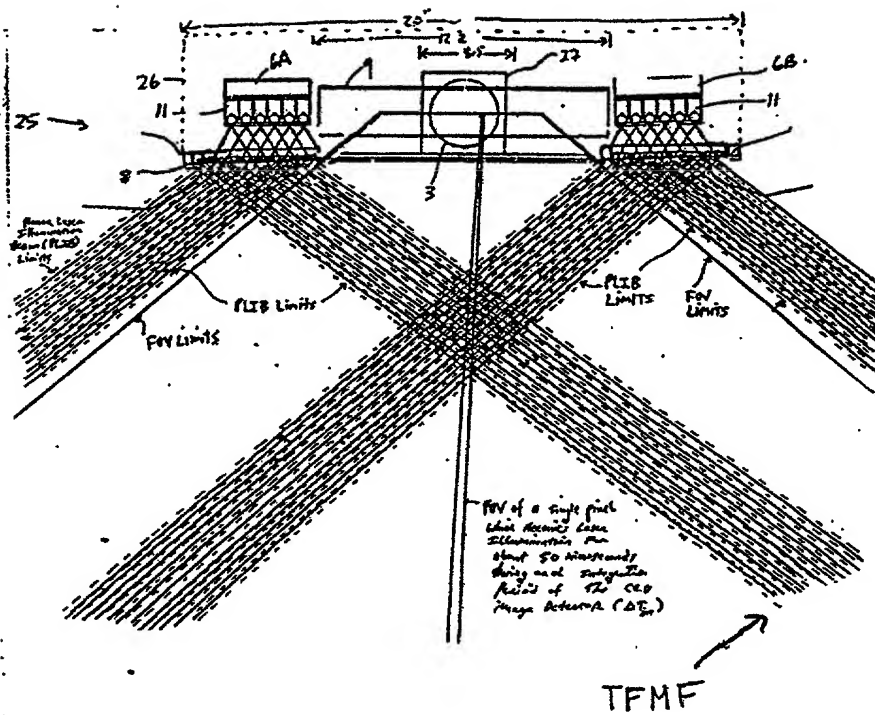


FIG. 1 I 18A

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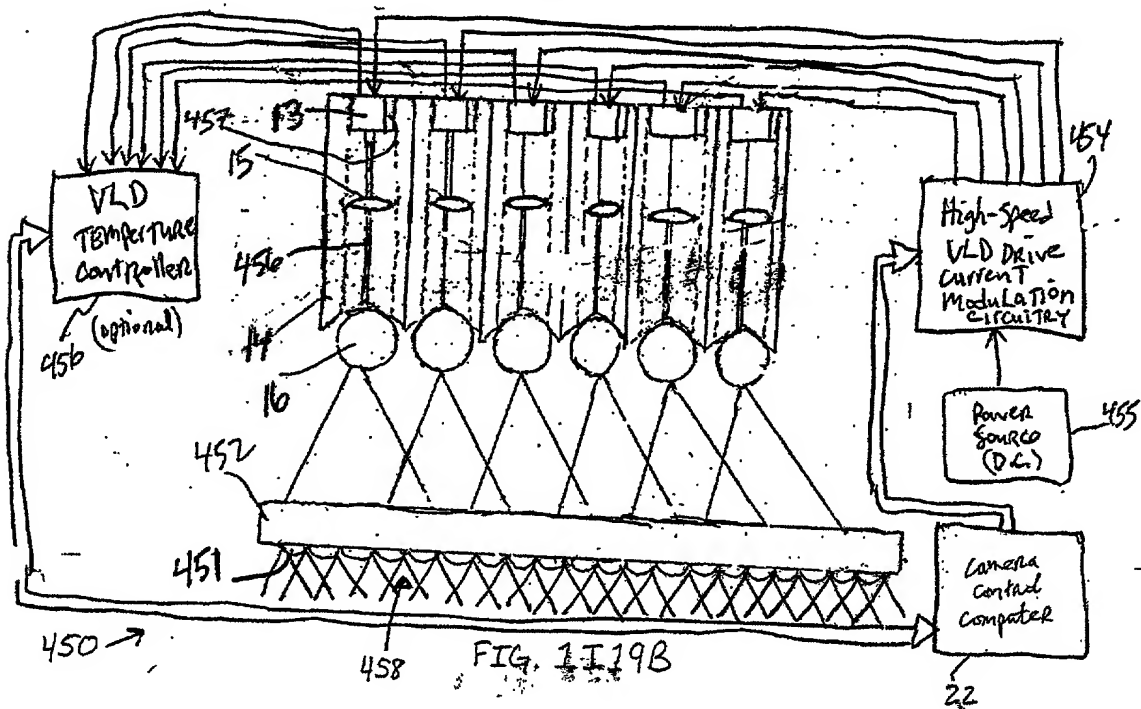
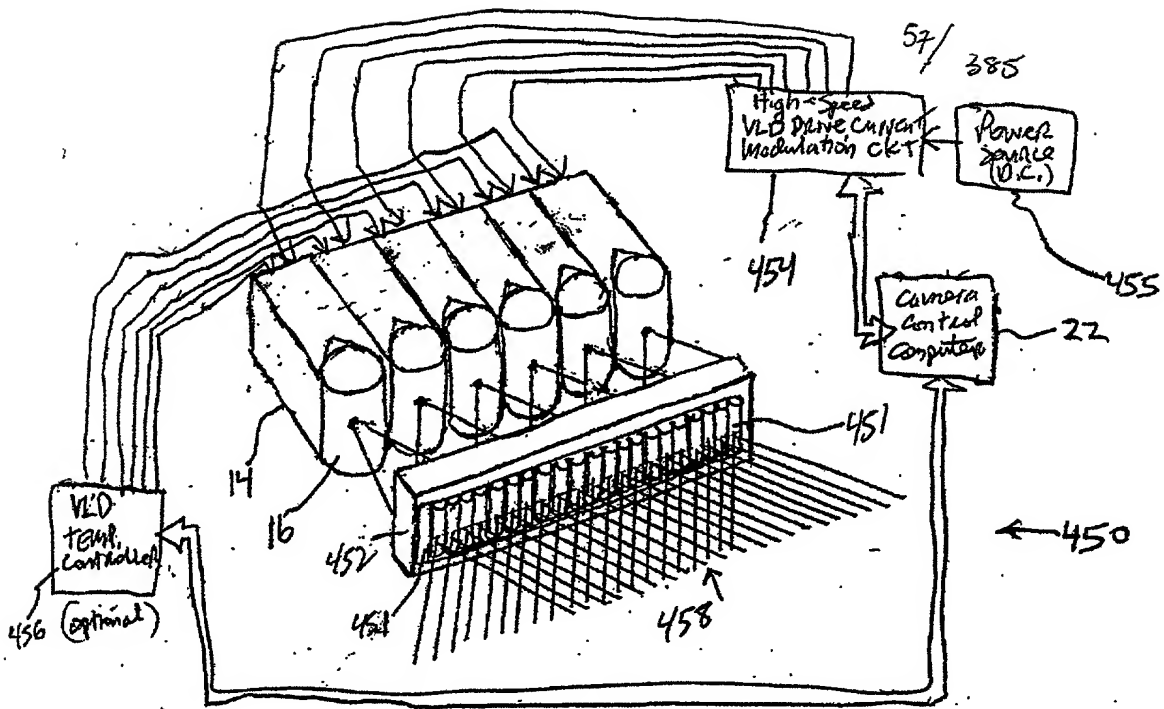
Fourth Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

Prior to illumination of the target with the planar laser illumination beam (PLIB), modulate the temporal frequency of the transmitted PLIB according to a temporal intensity modulation function (TIMF) so as to

produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

Temporally average the numerous substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce power of the speckle-noise pattern observed at the image detection array.

FIG. 1I18B



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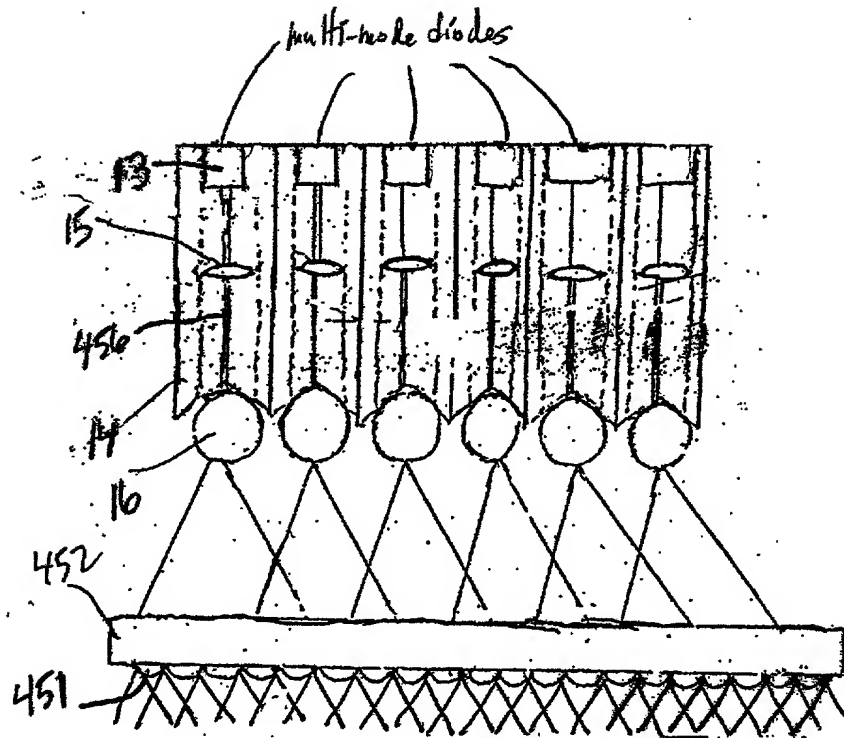


FIG 1I19C

FIFTY GENERALIZED METHOD
OF Reducing Speckle-Noise
PATTERNS AT Image
Detector array OF the
SPD subsystem (3)

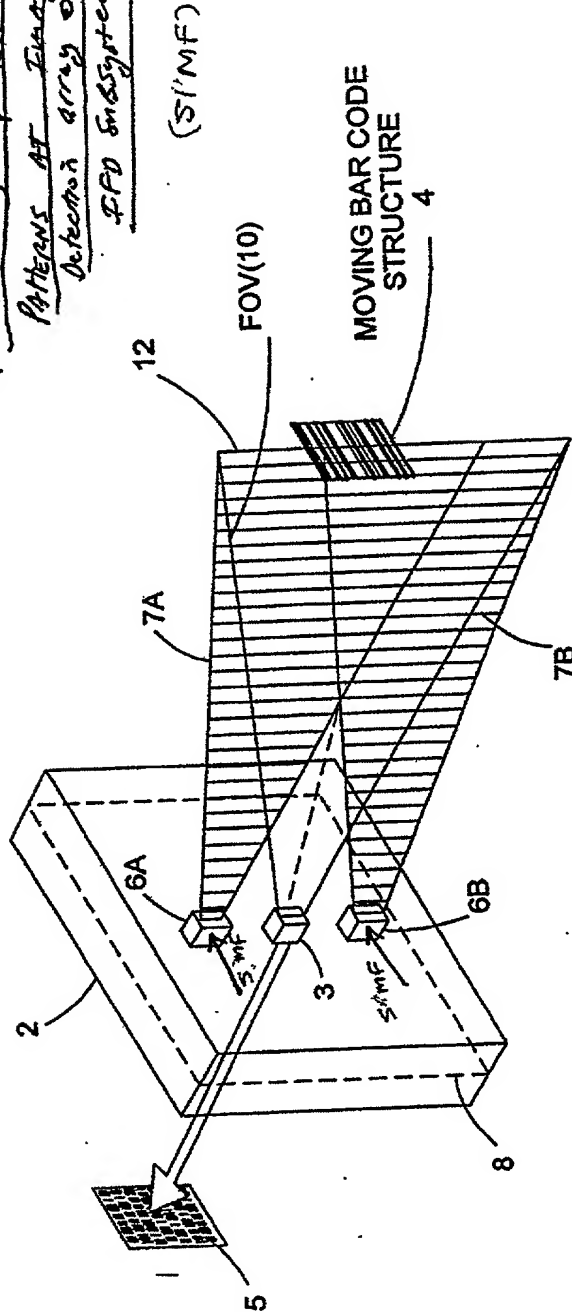


FIGURE 20

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Fifth Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

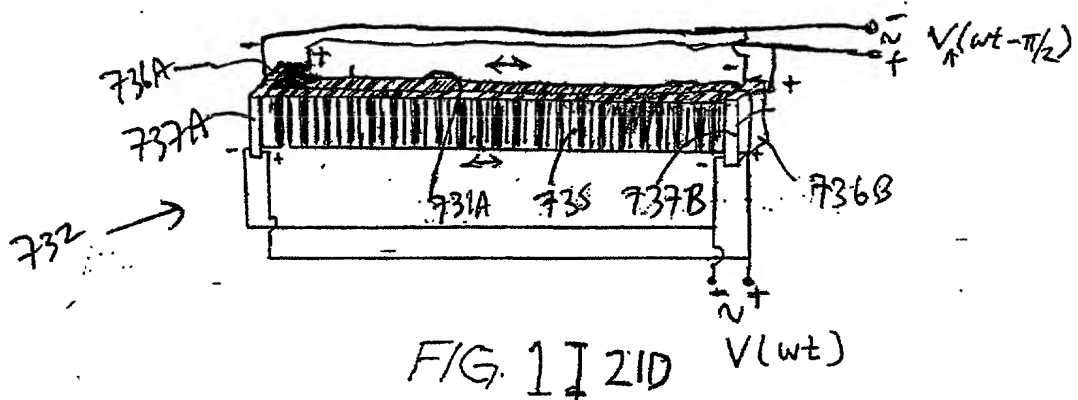
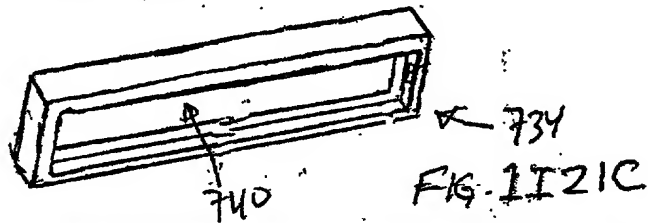
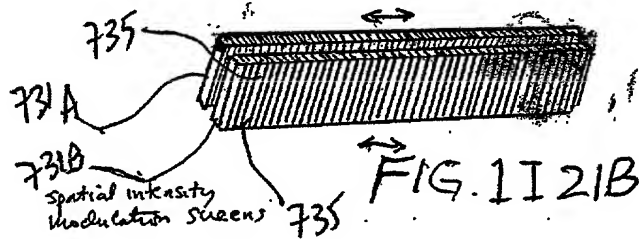
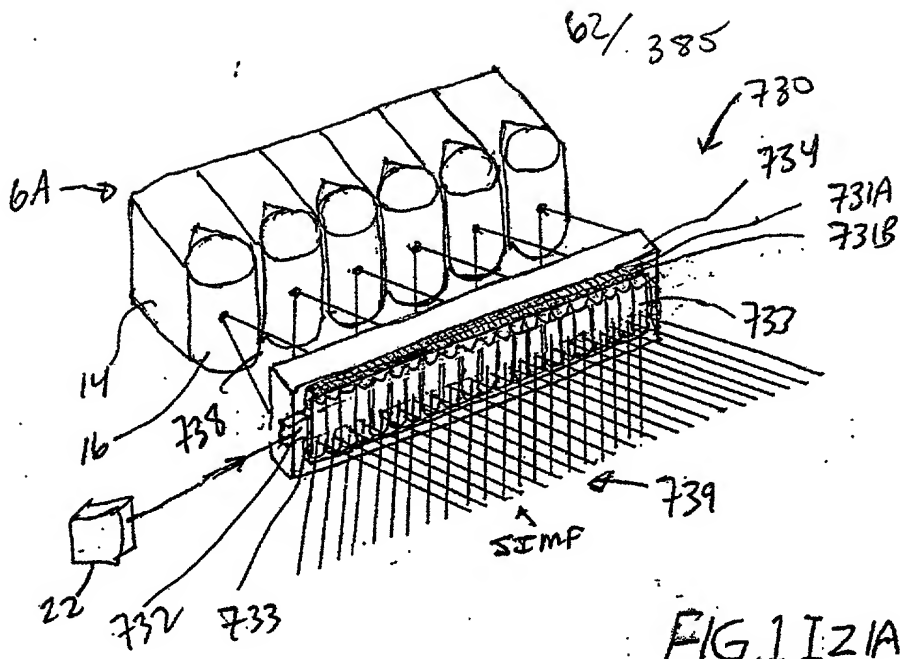
Prior to illumination of the target with the planar laser illumination beam (PLIB), modulate the spatial intensity of the transmitted PLIB along the planar extent thereof according to a spatial intensity modulation function (SIMF) so as to :

produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.



Temporally average the numerous substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce power of the speckle-noise pattern observed at the image detection array.

FIG. 1I20B



Generalized Method of
Reducing Speckle-Noise Patterns
at Image Detection array
of the IFD Subsystem

(SIMF)

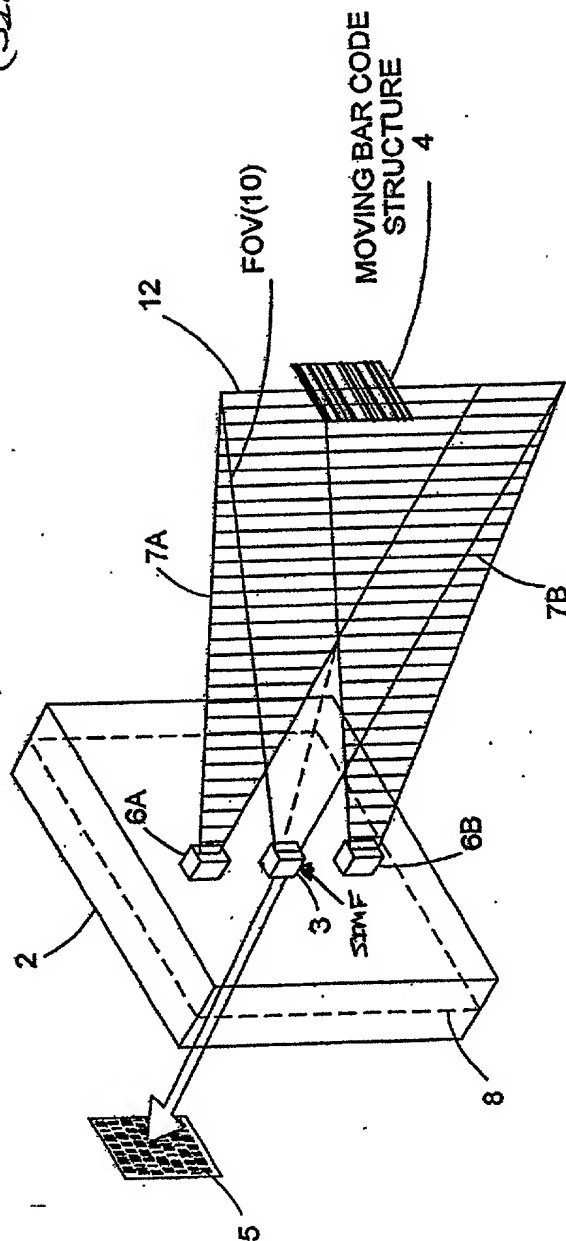


FIG. 1122

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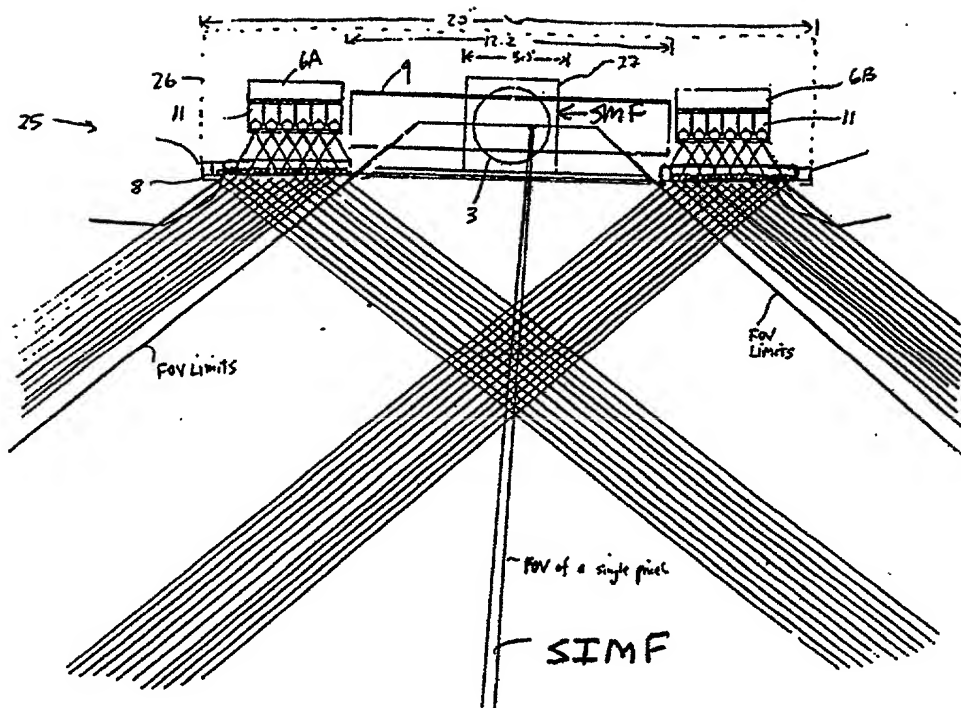


FIG. 1122A

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Sixth Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

After illumination of the target with the planar laser illumination beam (PLIB), modulate the spatial intensity of the reflected/scattered (i.e. received) PLIB along the planar extent thereof according to a spatial intensity modulation function (SIMF) so as to :

produce numerous substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

Temporally average the many substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce the speckle-noise pattern observed at the image detection array.

FIG. 1I 22B

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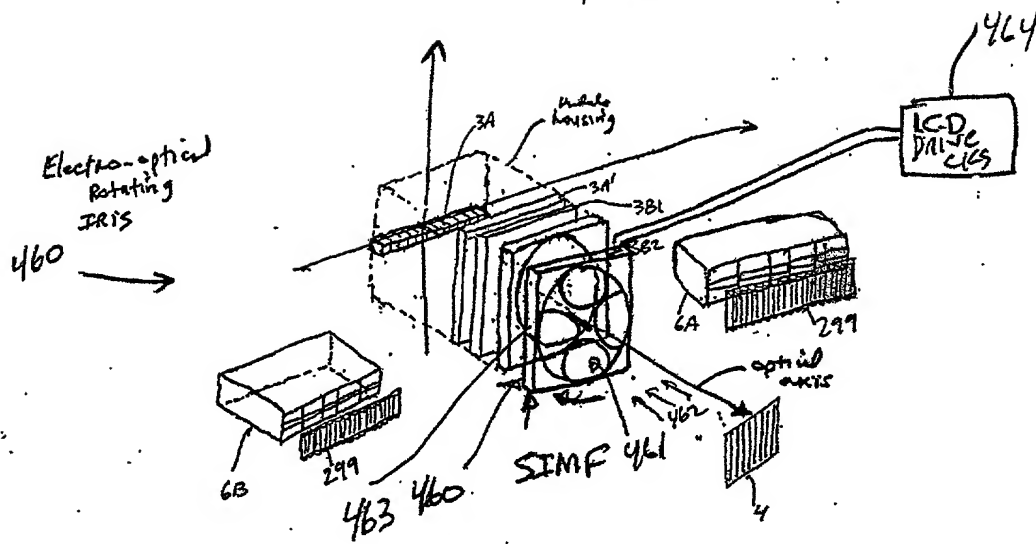


FIG. 1I 23A

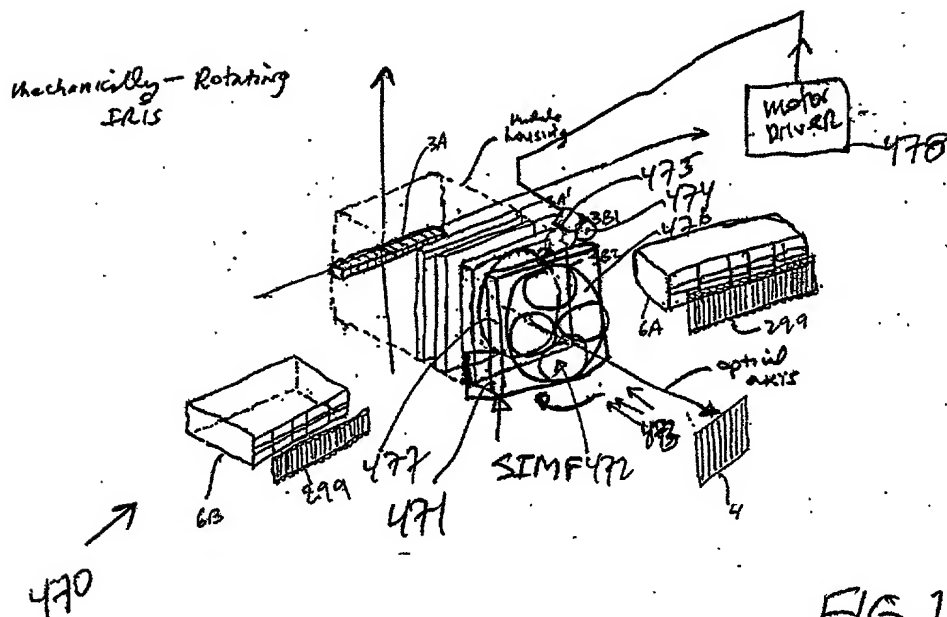


FIG. 1I 23B

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Seventh Generalized Method of
Reducing Spade-Noise Patterns
at Image Detection Array
of 76 IFD Subsystem

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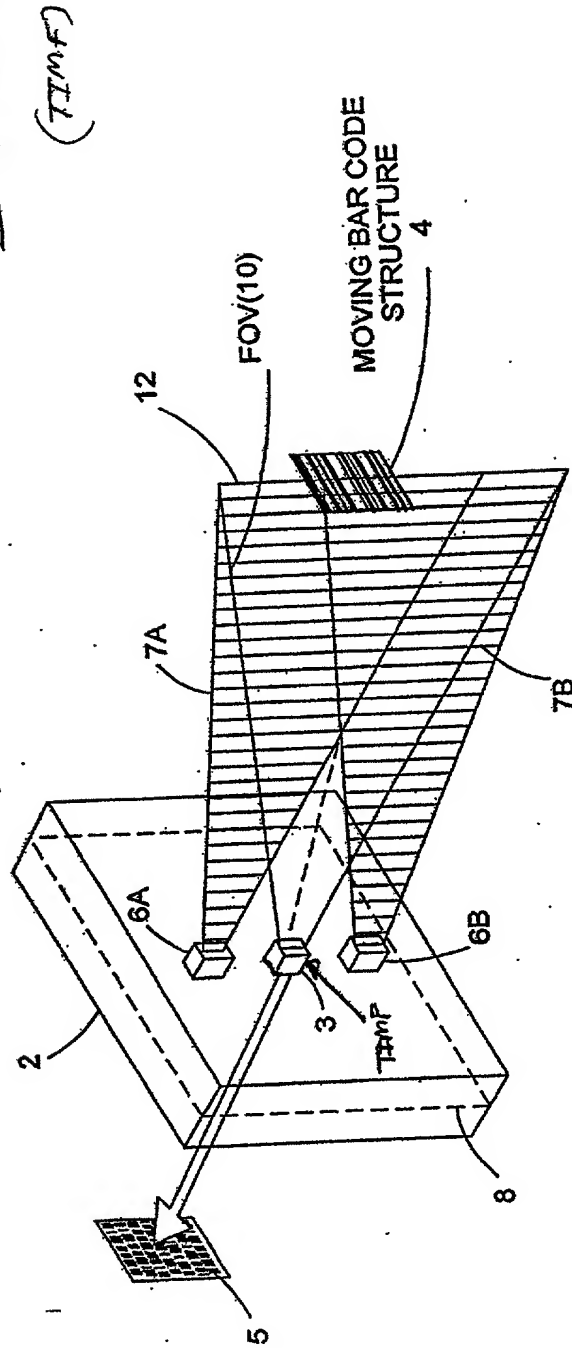


FIG. 1124

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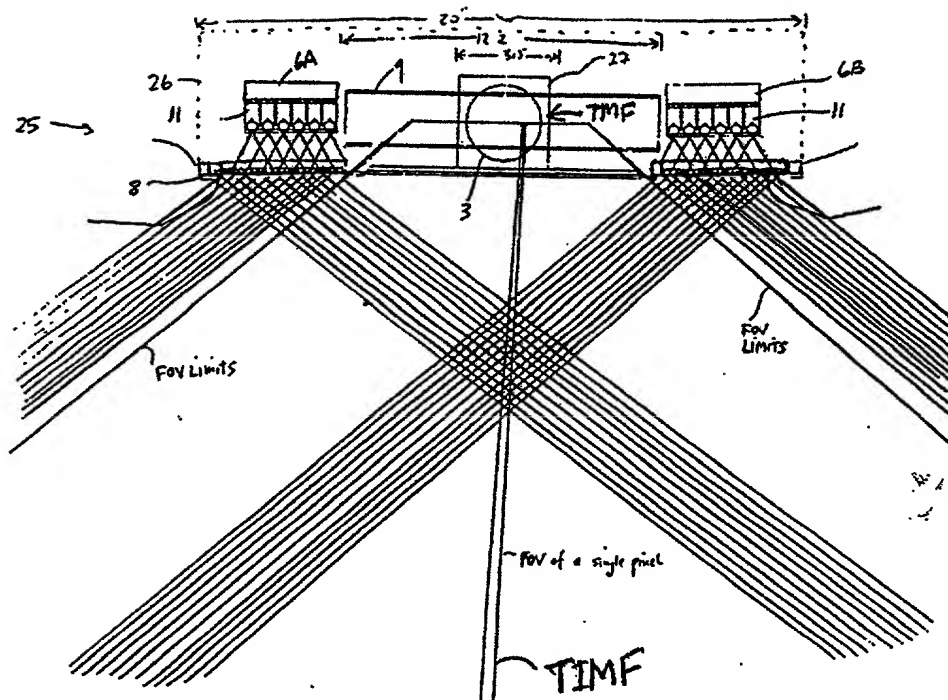


FIG. 1I24A

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Seventh Generalized Speckle-Noise Pattern Reduction Method
Of The Present Invention

After illumination of the target with the planar laser illumination beam (PLIB), modulate the temporal intensity of the reflected/scattered (i.e. received) PLIB along the planar extent thereof according to a temporal intensity modulation function (TIMF) so as to :

produce many substantially different time-varying speckle-noise patterns at the image detection array of the IFD Subsystem during the photo-integration time period thereof.

Temporally average the many substantially different time-varying speckle-noise patterns produced at the image detection array in the IFD Subsystem during the photo-integration time period thereof, so as to thereby reduce the speckle-noise pattern observed at the image detection array.

FIG. 1I 24B

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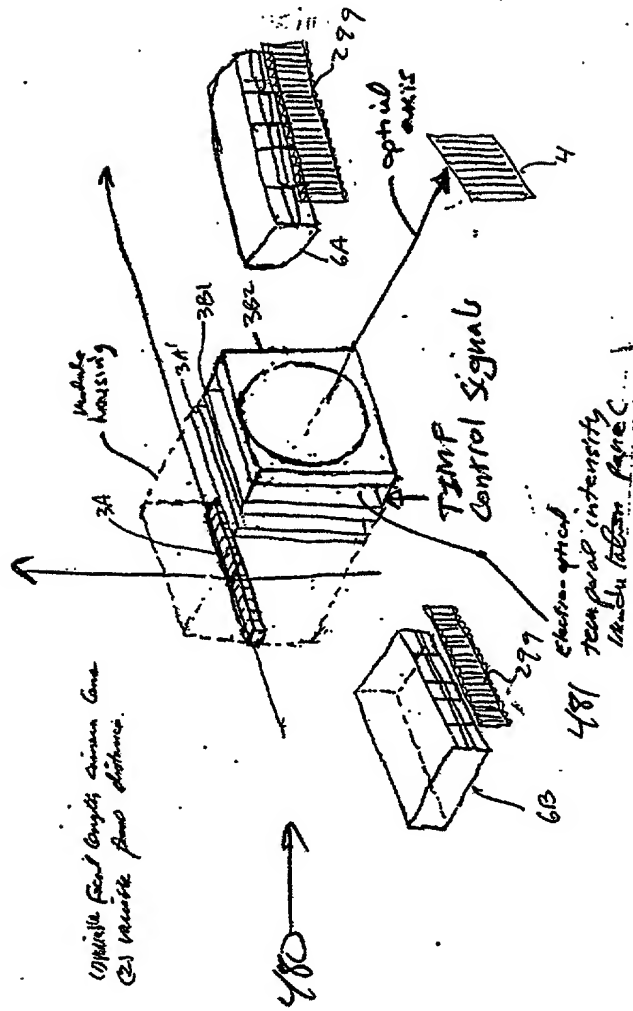


FIG. 11Z4C

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EIGHT GENERALIZED METHOD OF REDUCING THE SPECKLE PATTERN
NOISE OBSERVED IN PLIIM-BASED IMAGING SYSTEMS

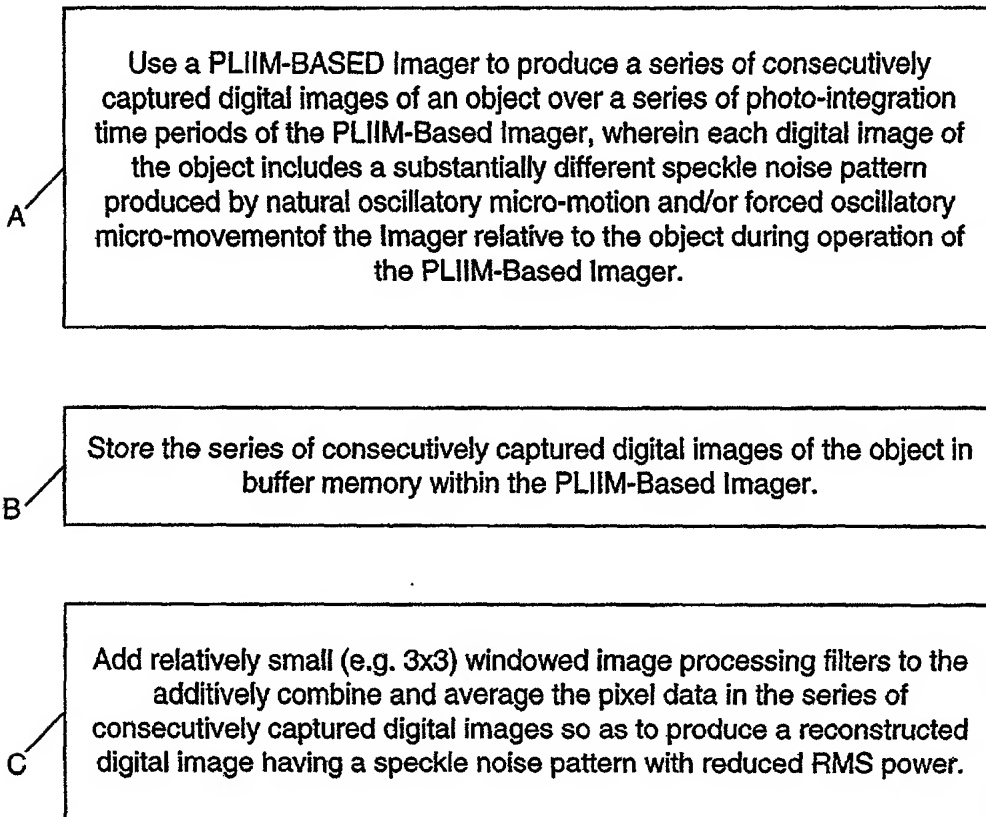
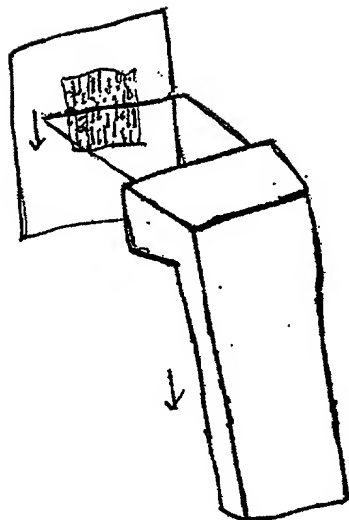


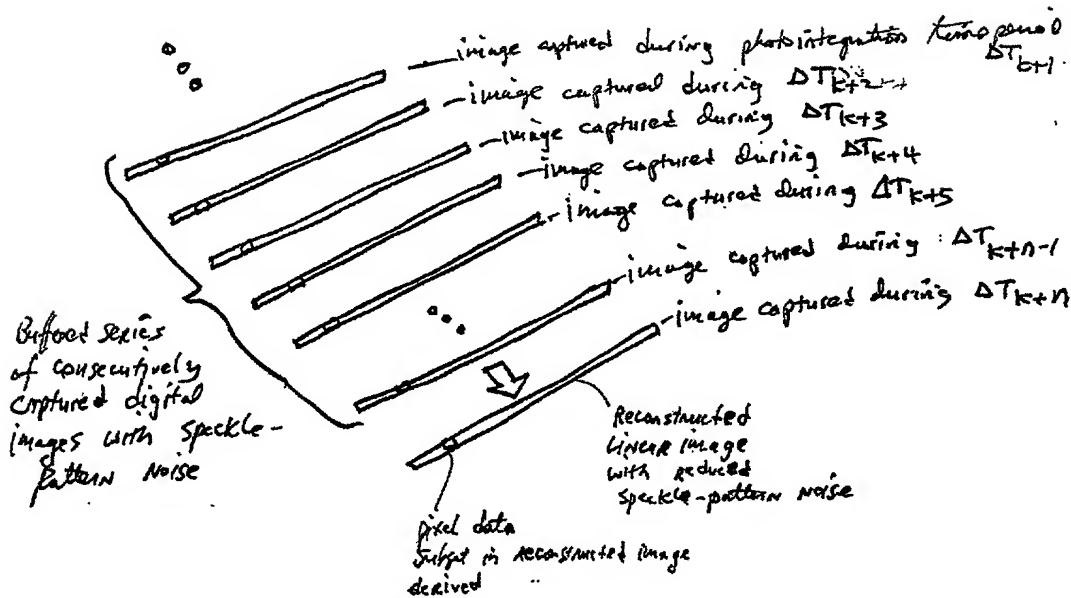
FIG. 1124D

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Manual
Sweeping
Action
across Code Symbol
or
graphical indicia

FIG. 1124E



Case: Linear Image

FIG. 1124F

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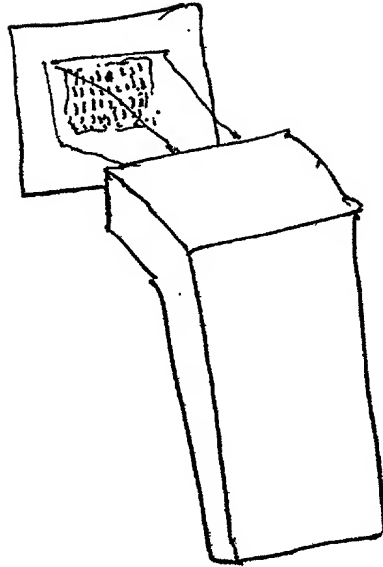


FIG. 1I24G

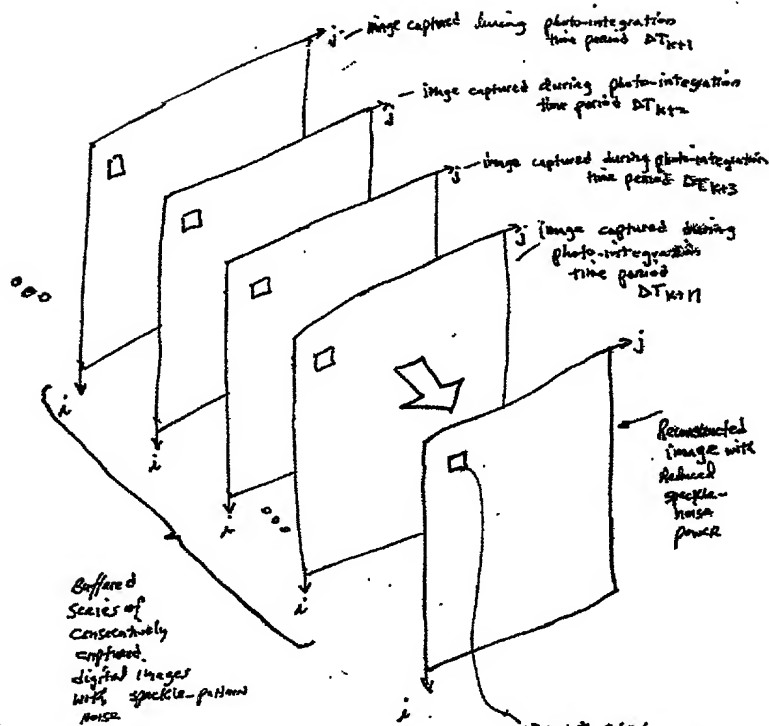


FIG 1I24H

Case: 2D Area Imager

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NINTH GENERALIZED METHOD OF REDUCING SPECKLE PATTERN
NOISE IN PLIIM-BASED IMAGING SYSTEMS

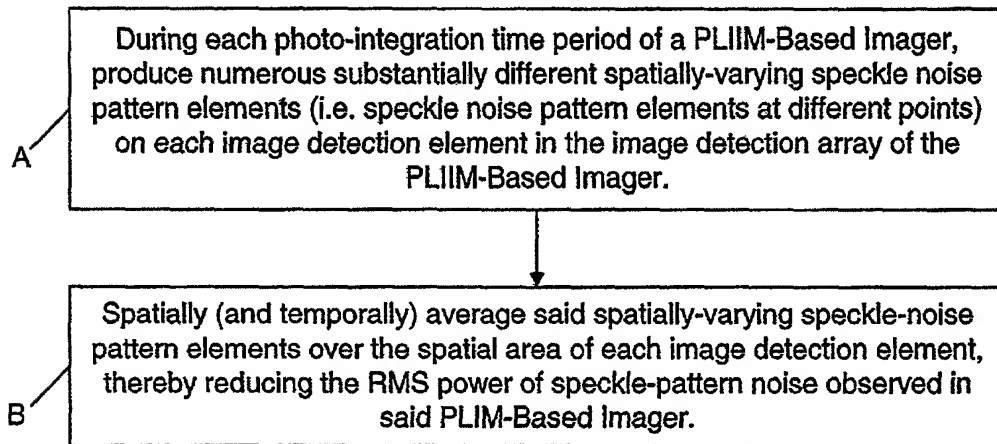
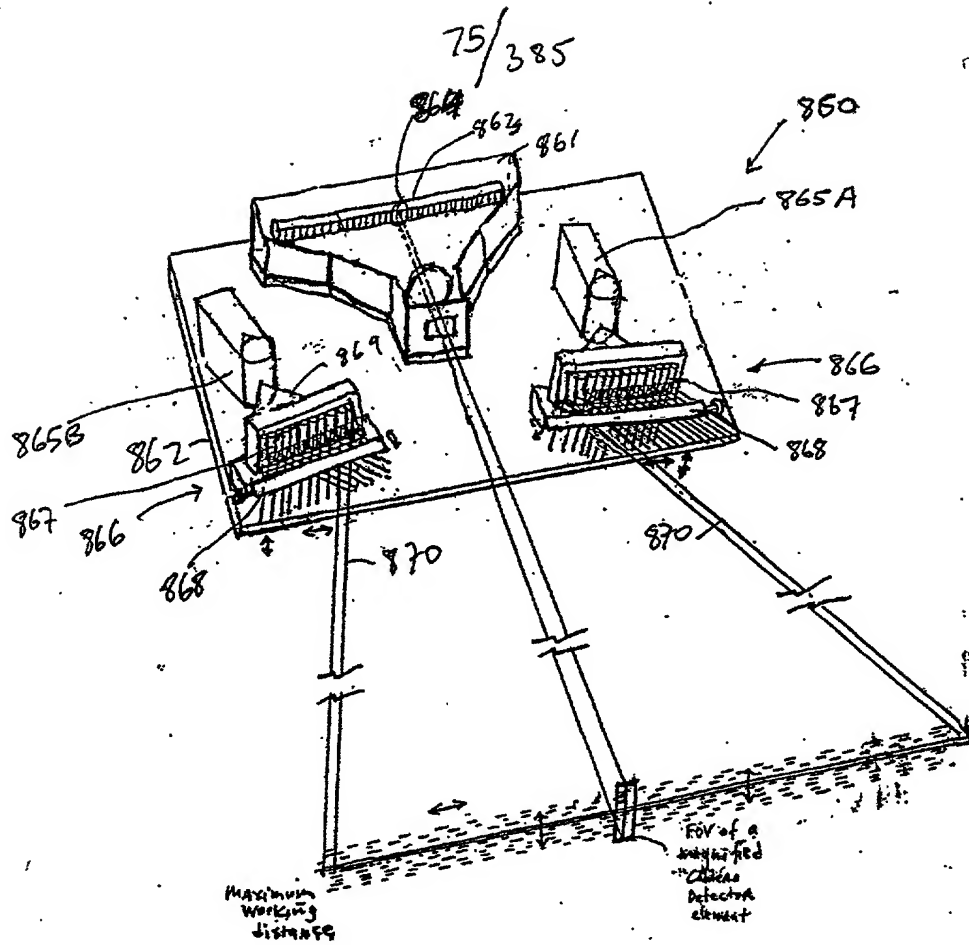


FIG. 1124I



* Lateral and Transverse Microoscillation of PLIB

FIG. 1I25A1

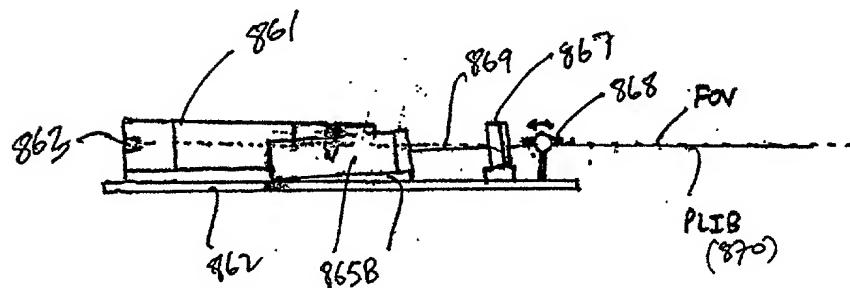
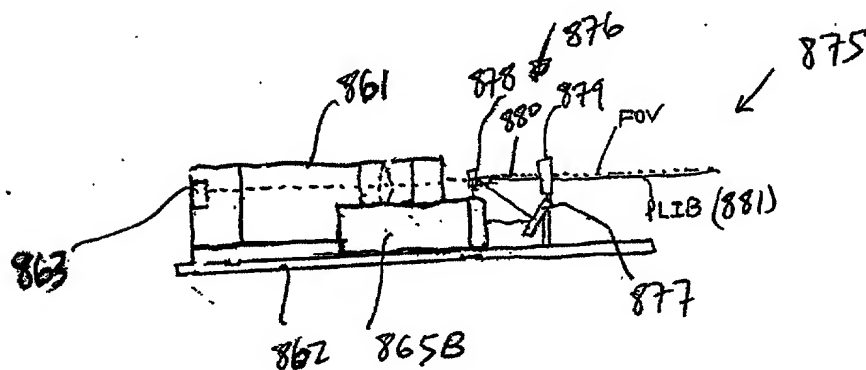
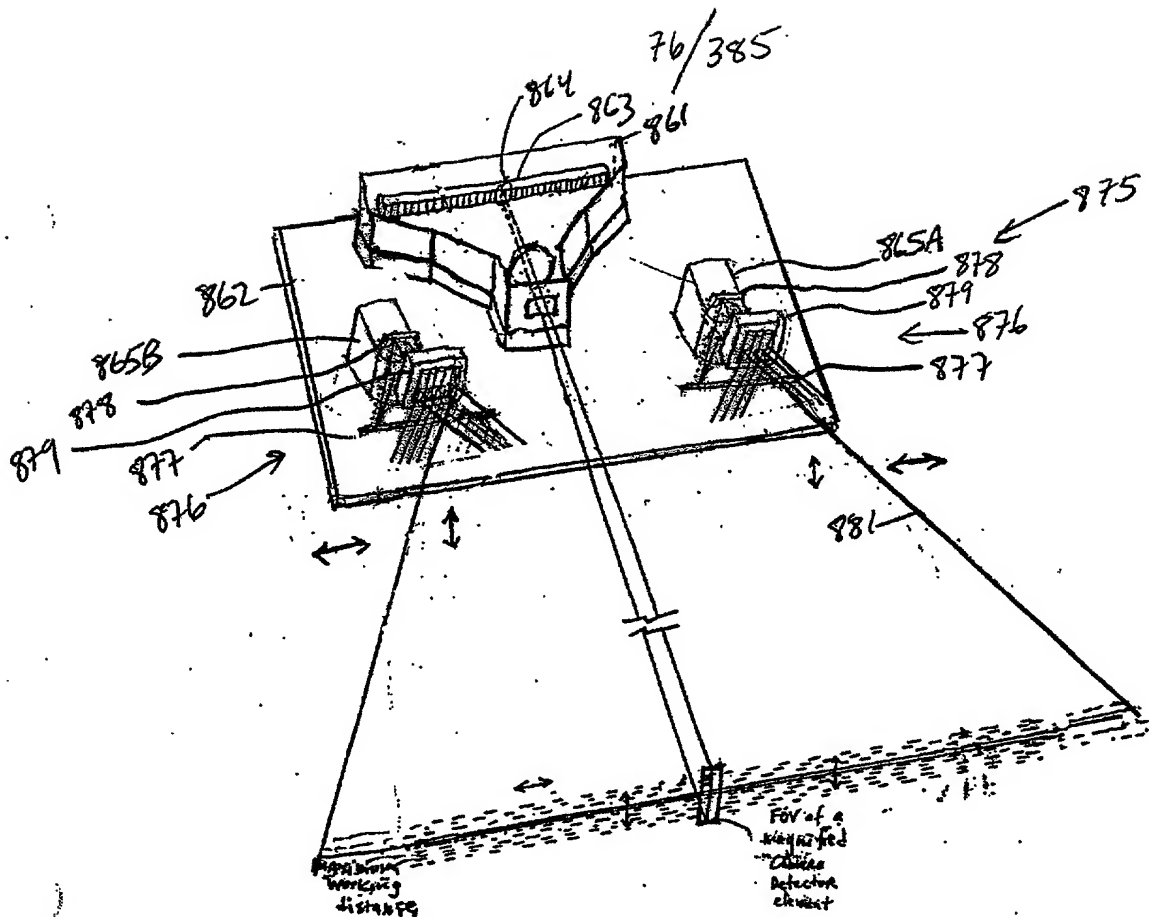
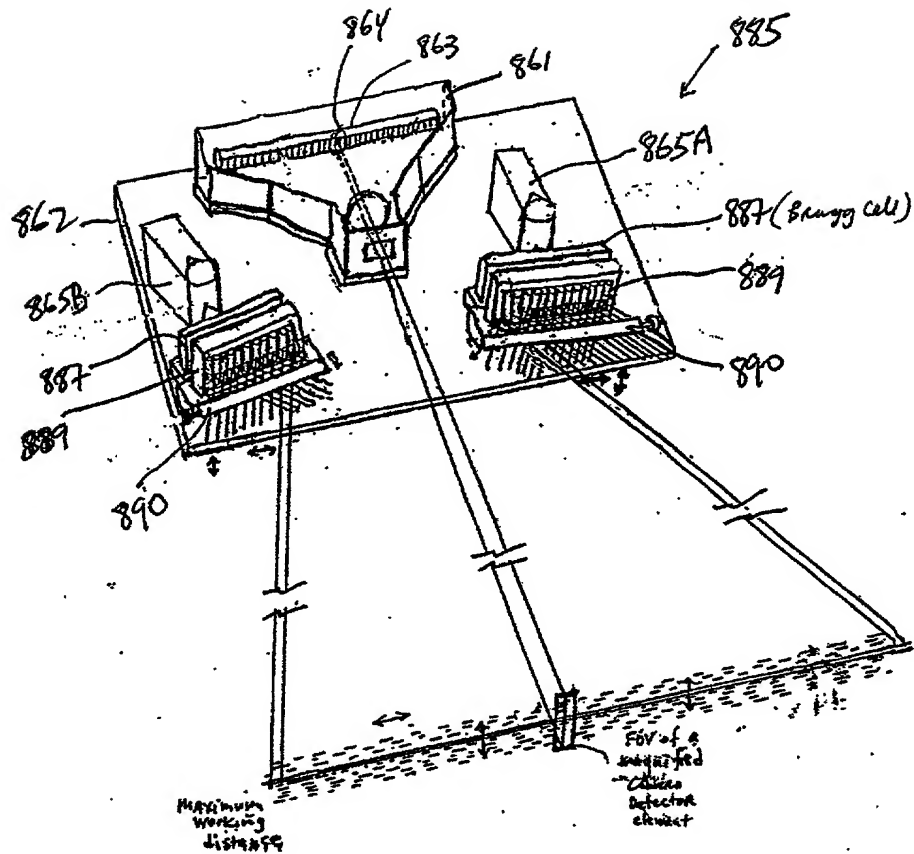


FIG. 1I25A2



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* Lateral and Transverse Microoscillation of PLIB

FIG. 1I25C1

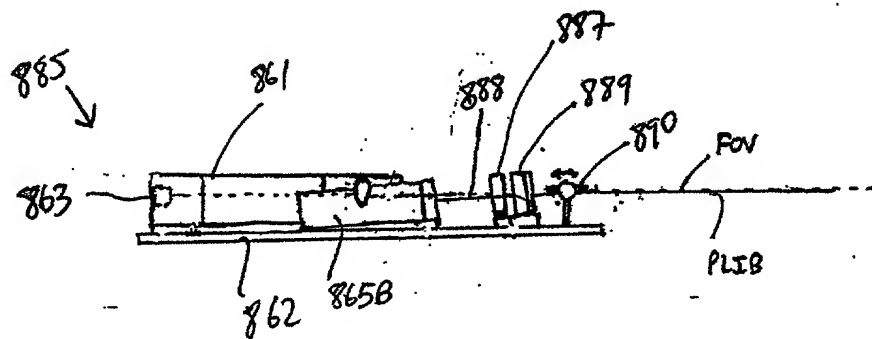


FIG. 1I25C2

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

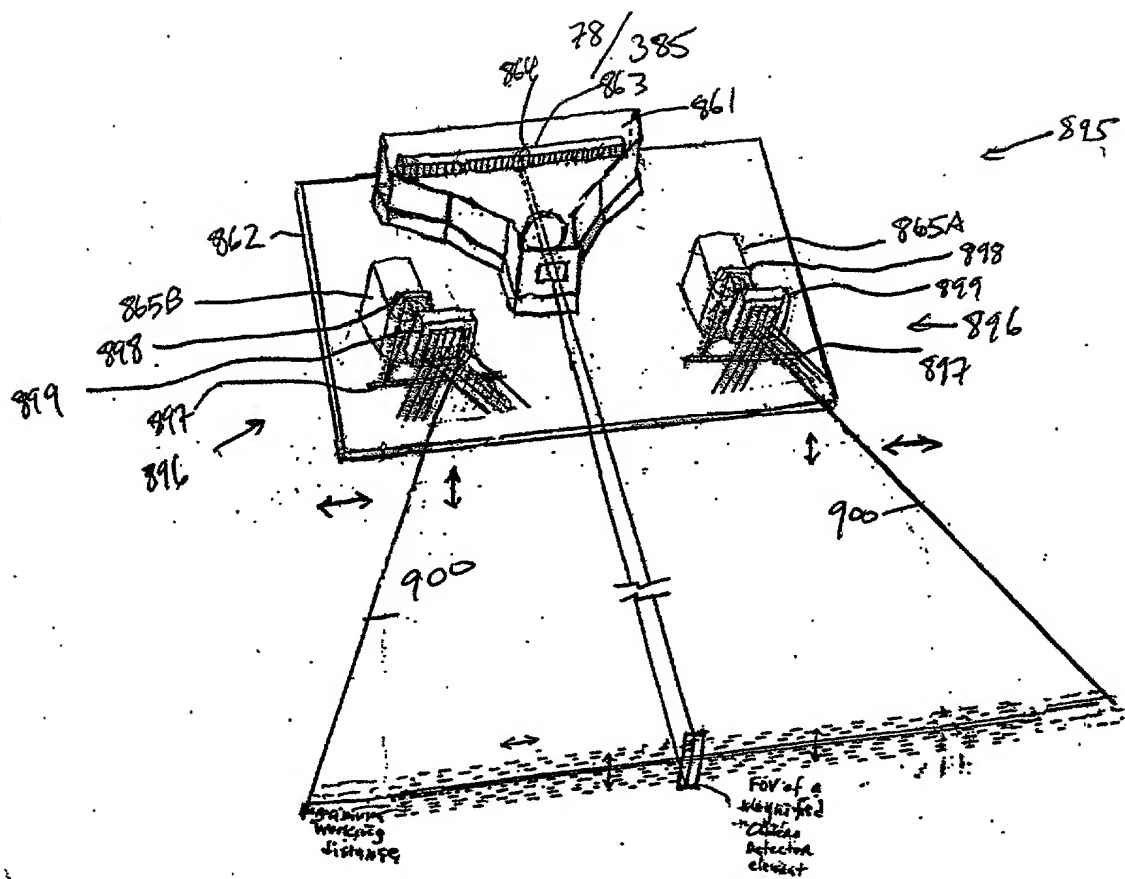


FIG. 1 I 25 D1

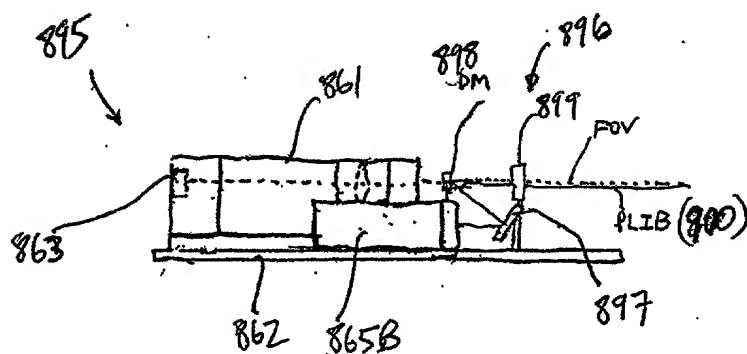
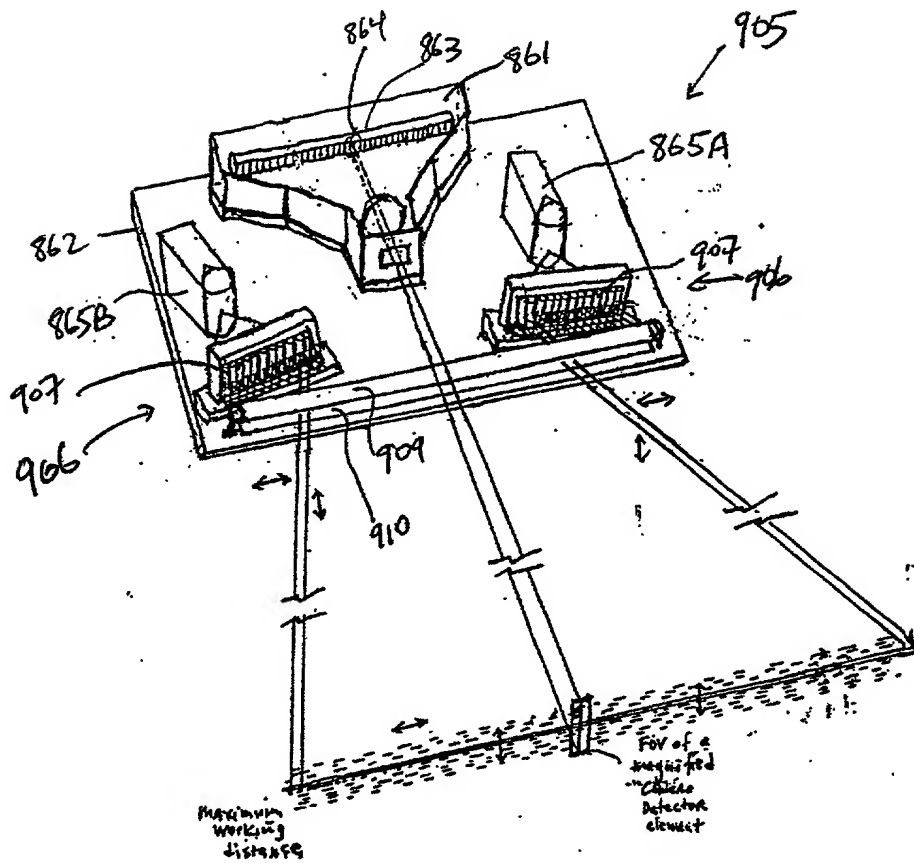


FIG. 1I 25D2

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* Lateral and Transverse Microoscillation of PLIB

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FIG. 1I25E1

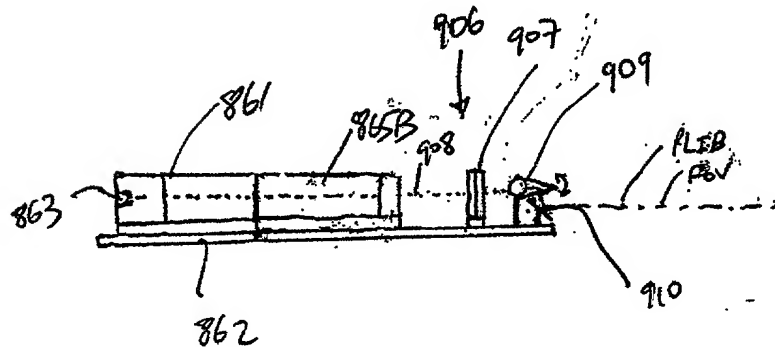


FIG. 1I25E2

- * Lateral and Transverse Microradiation of ALIB

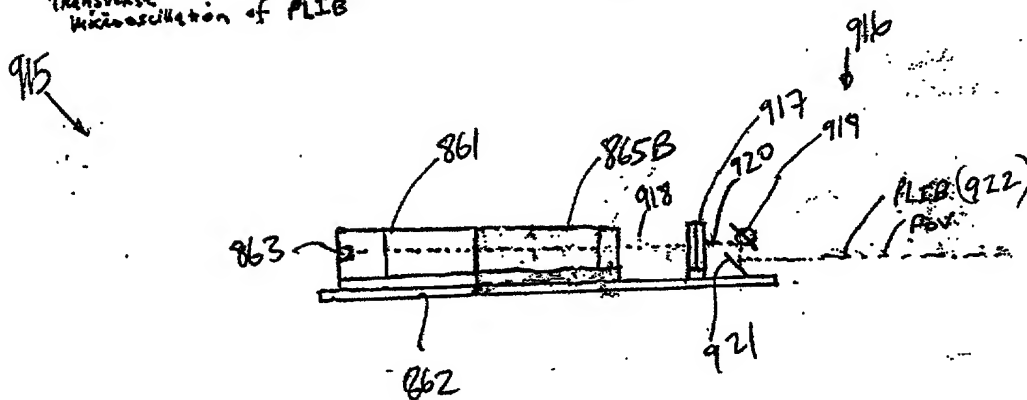
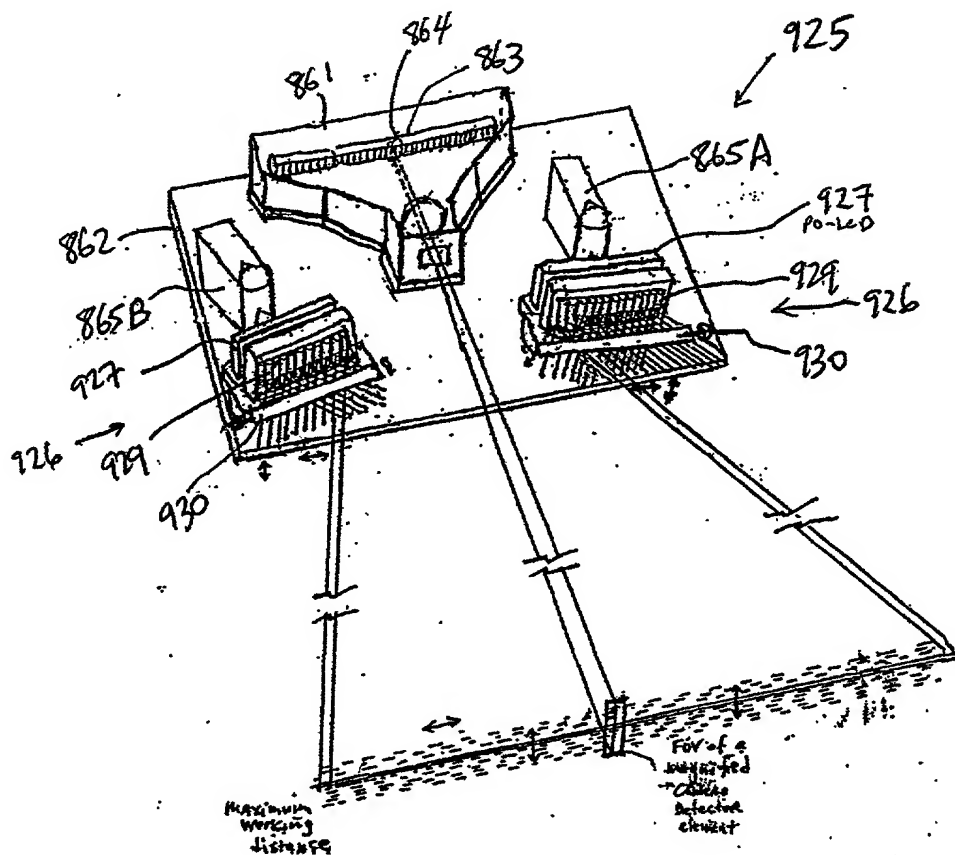


FIG. 1I 25 F2

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* Lateral and Transverse Misalignment of PLIB

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FIG. 1I25G1

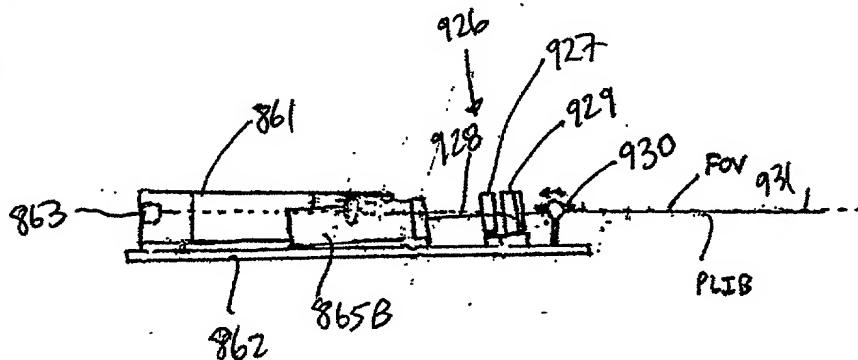
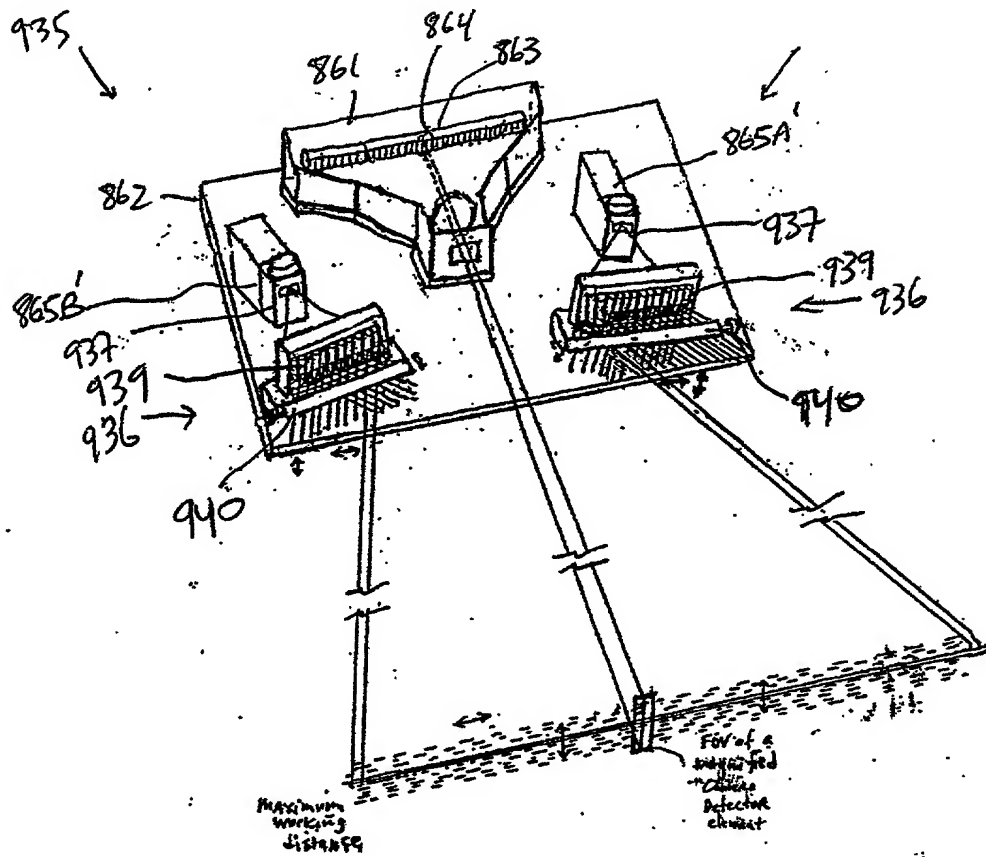


FIG. 1I25G2

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* Lateral and Transverse Misalignment of PLIB

FIG. 1I25H1

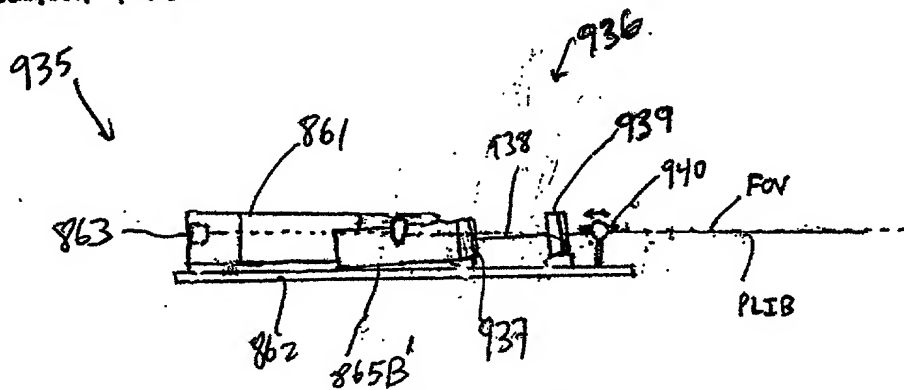
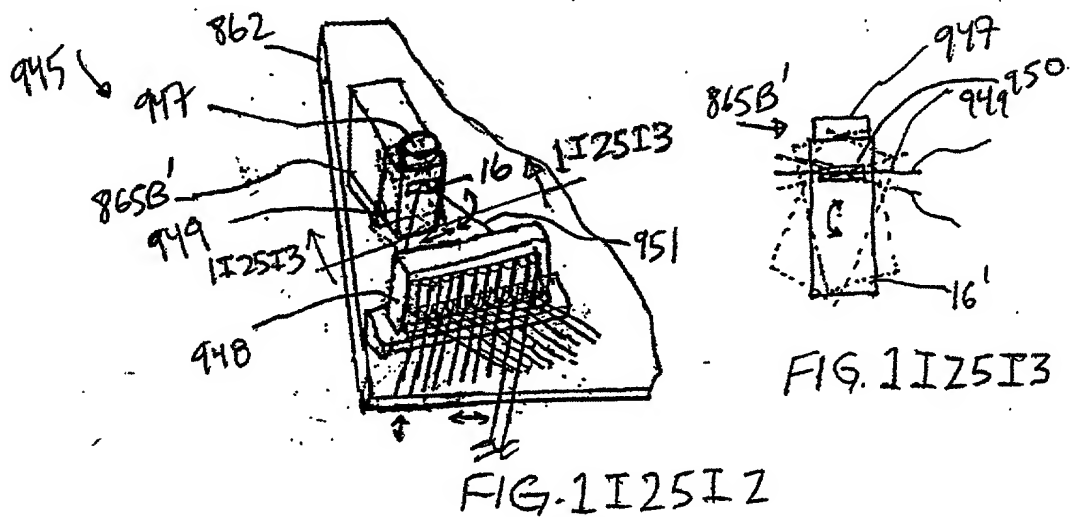


FIG. 1I25H2

Maximum working distance

Fov of a magnified Chain Detector element

FIG. 1 I 25 I 1



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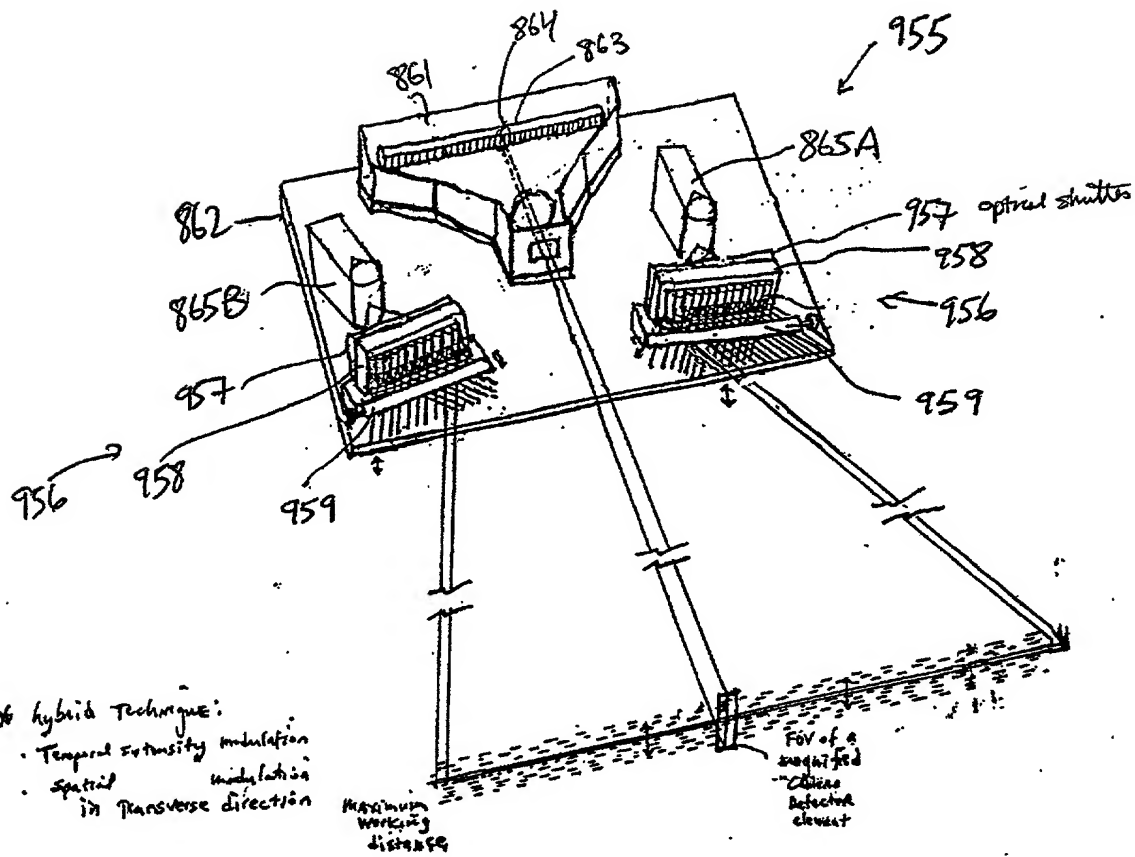


FIG. 1I25J1

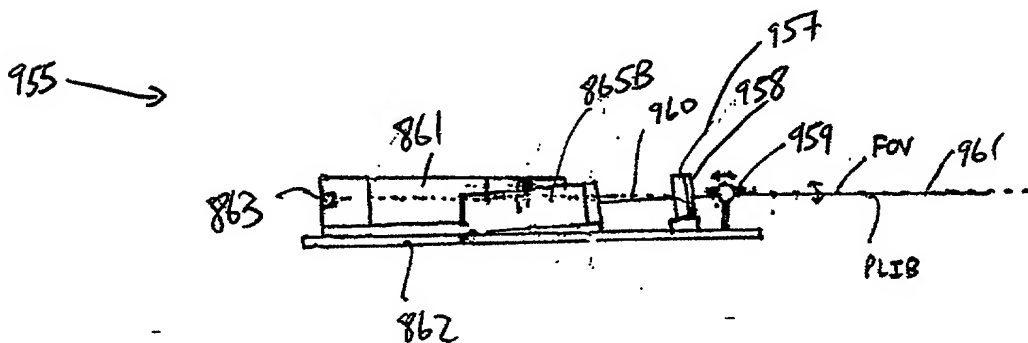


FIG. 1I25J2

1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085															

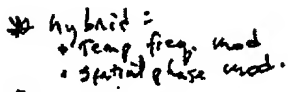


FIG. 1125L1



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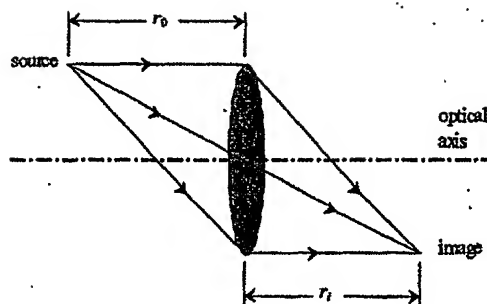


FIG. 1H1

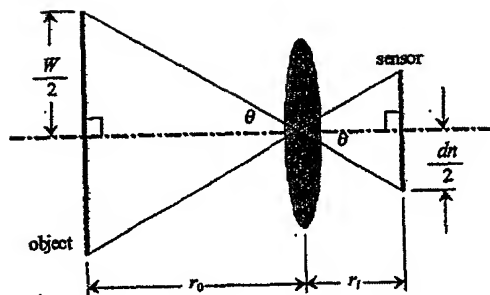


FIG. 1H2

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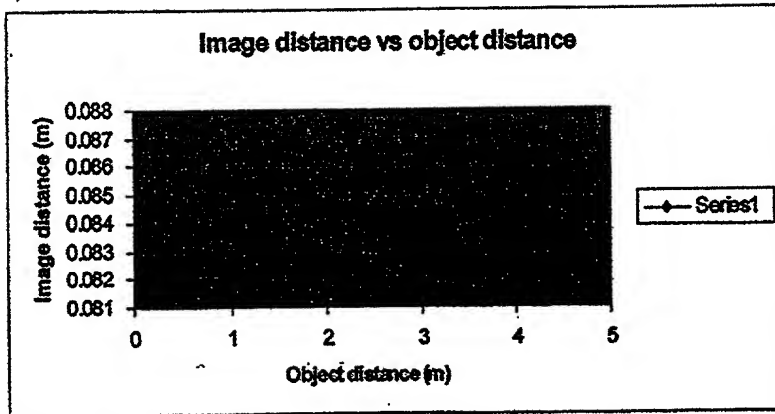


FIG. 1H3

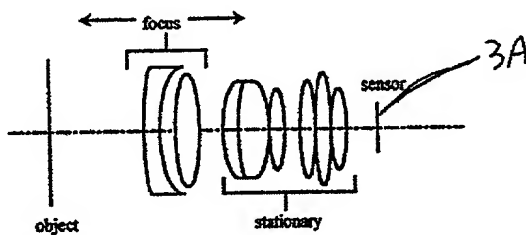


FIG. 1H4

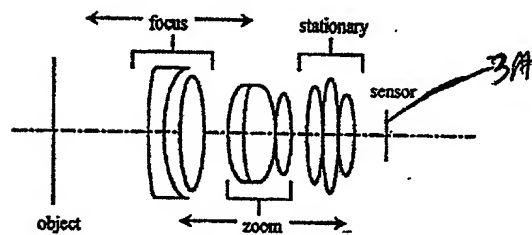
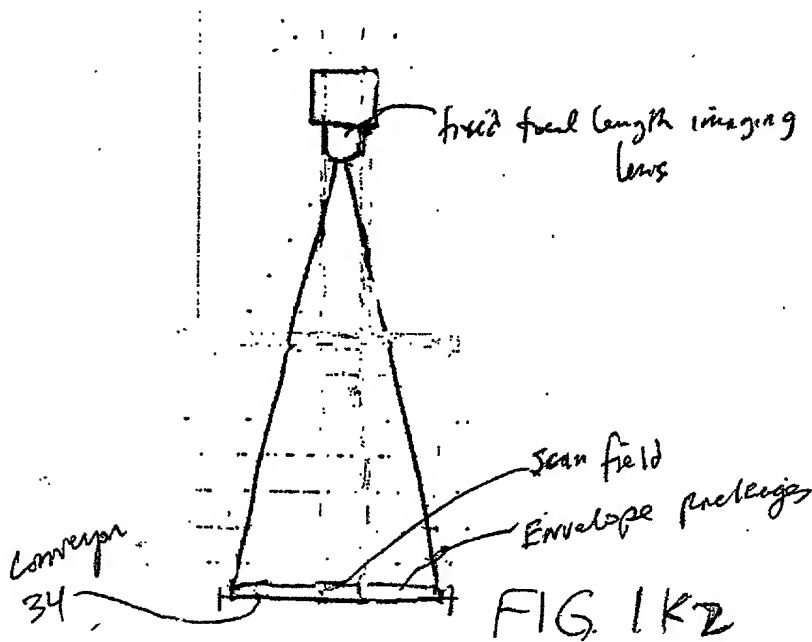
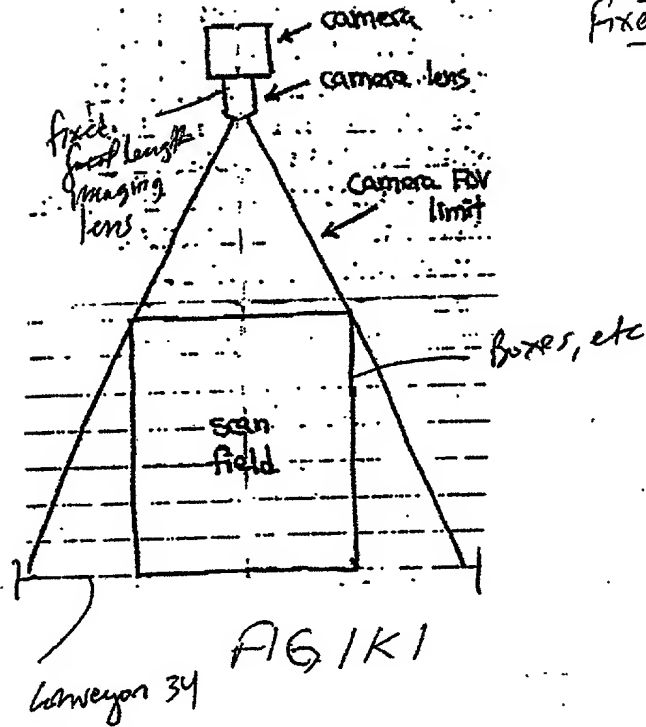


FIG. 1H5

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Fixed focal length lens
cases



20250228 09:46:00

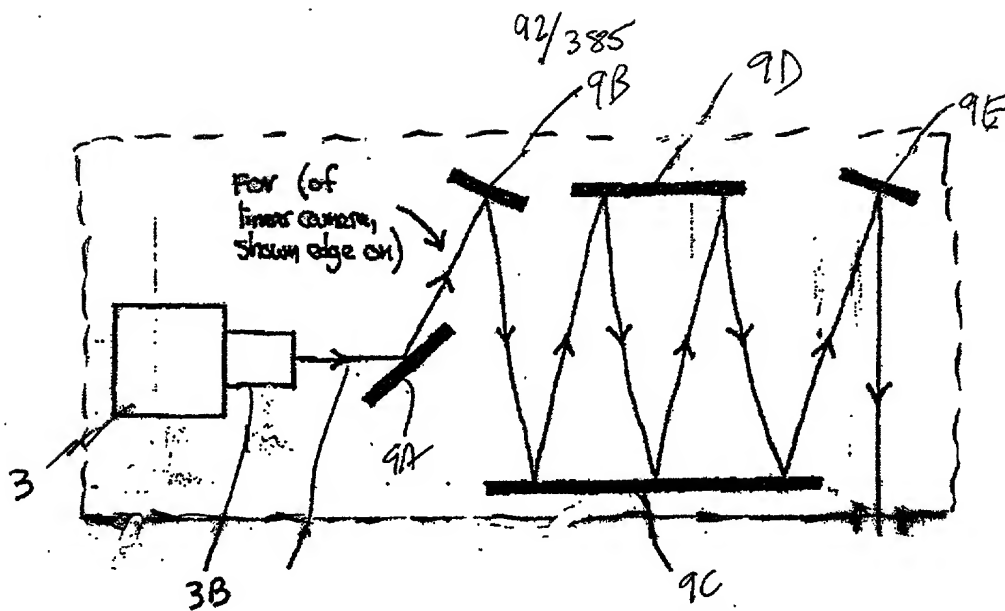


FIG. 1L1

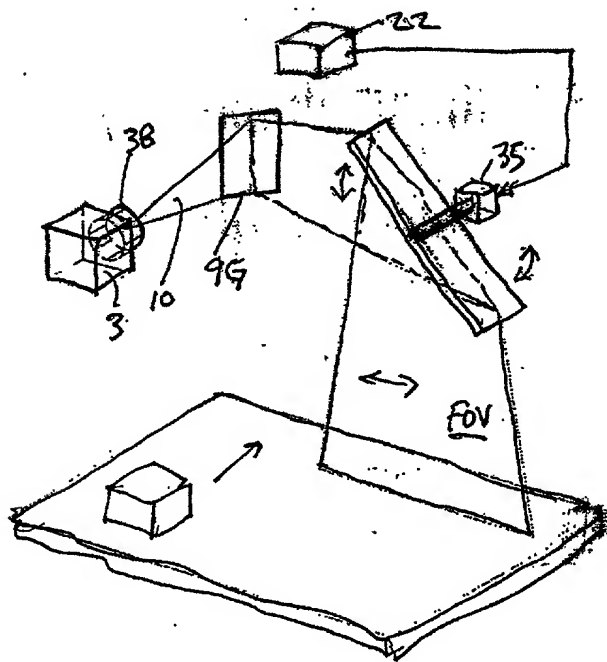


FIG. 1L2

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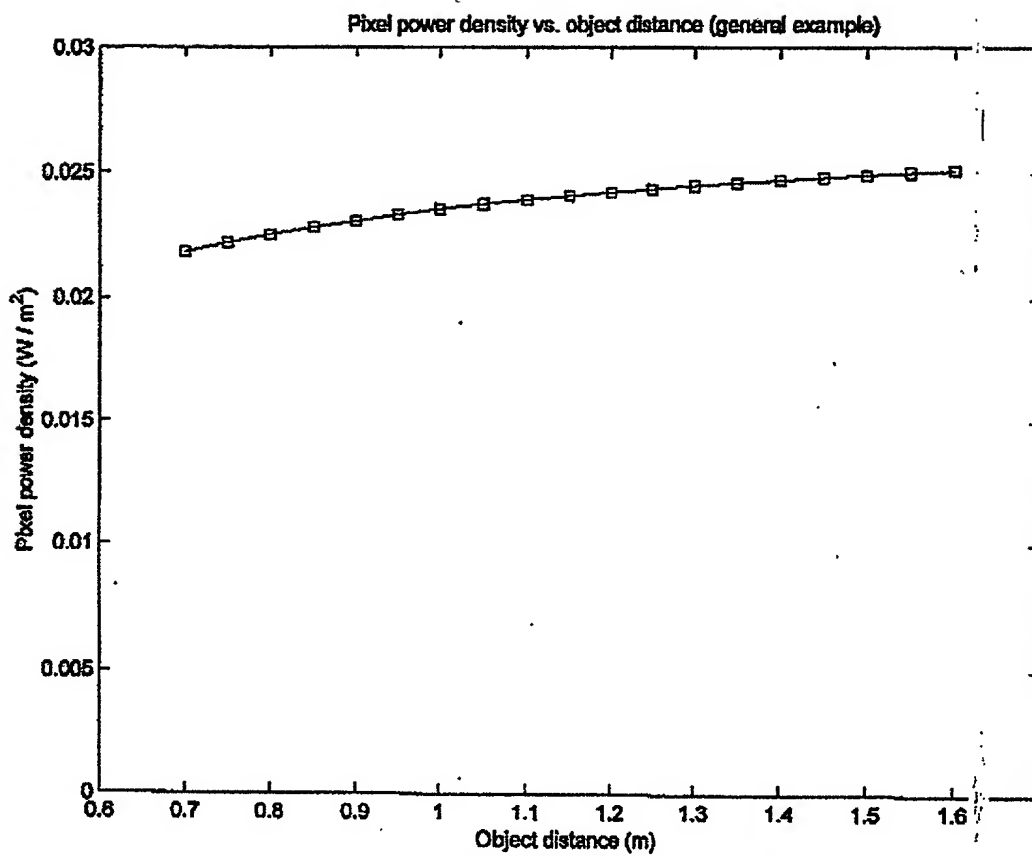


FIG-1M1

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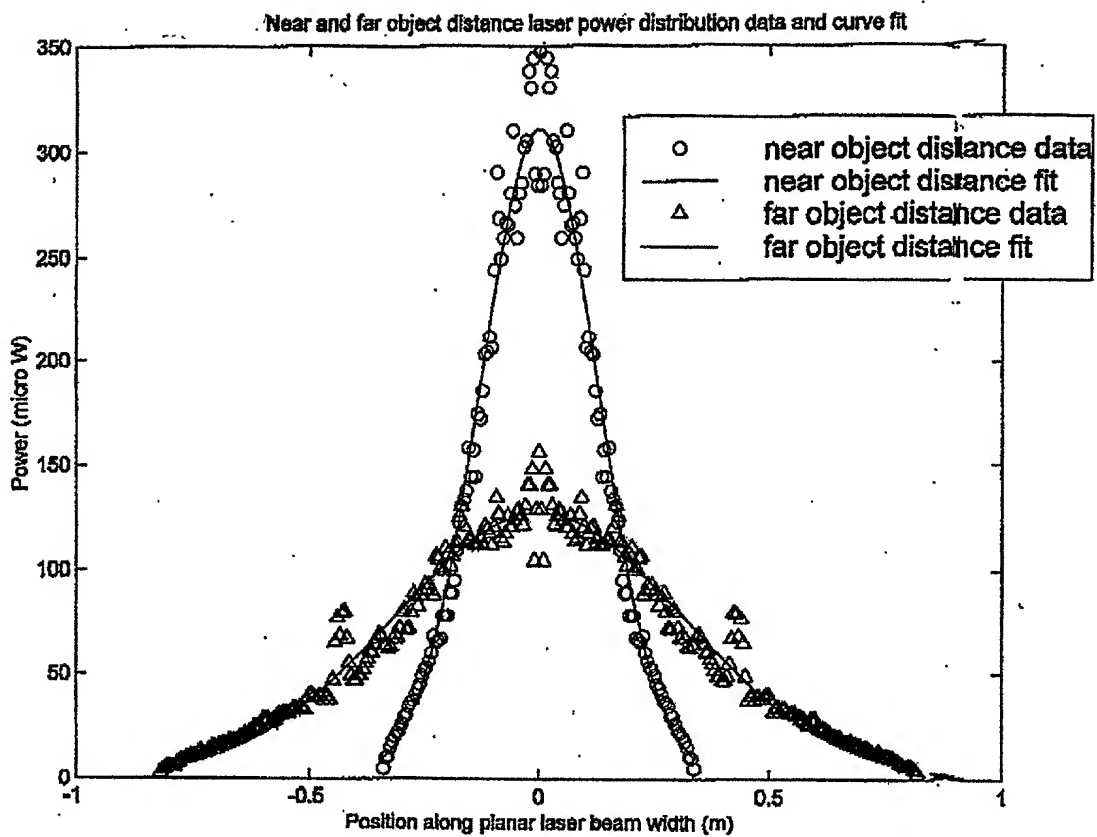


FIG. 1M2

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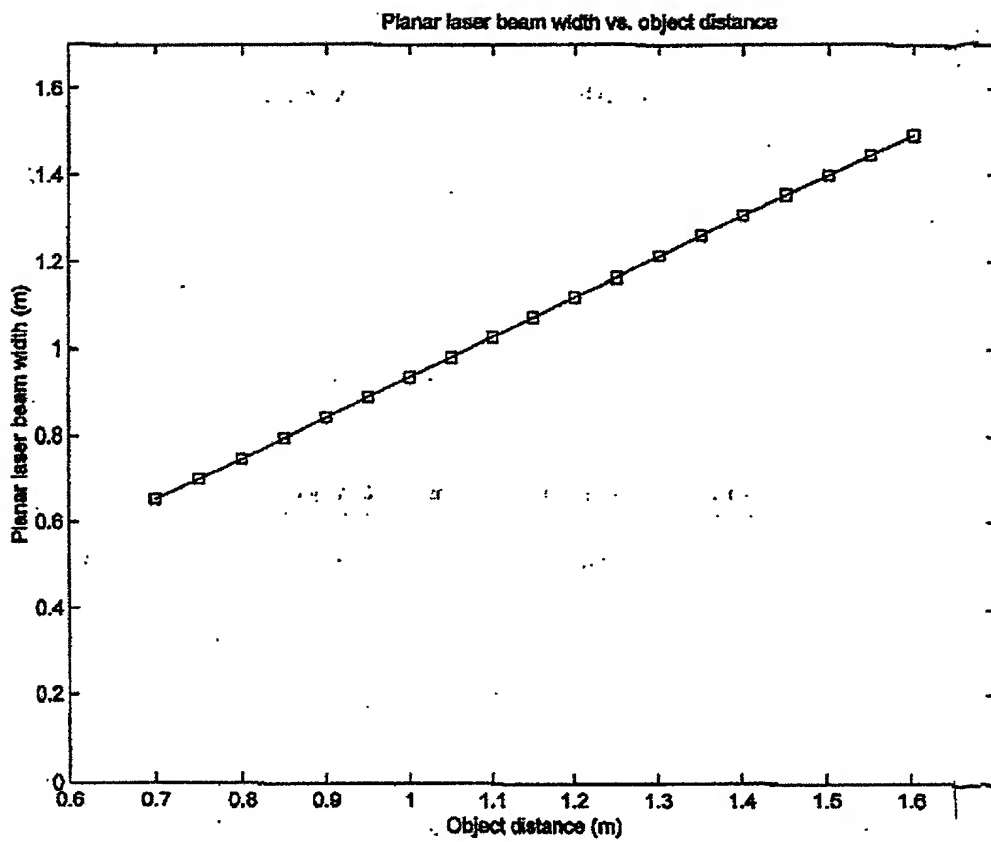


FIG. 1M3

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Figure 4: Planar laser beam height vs. object distance (far object distance focus)

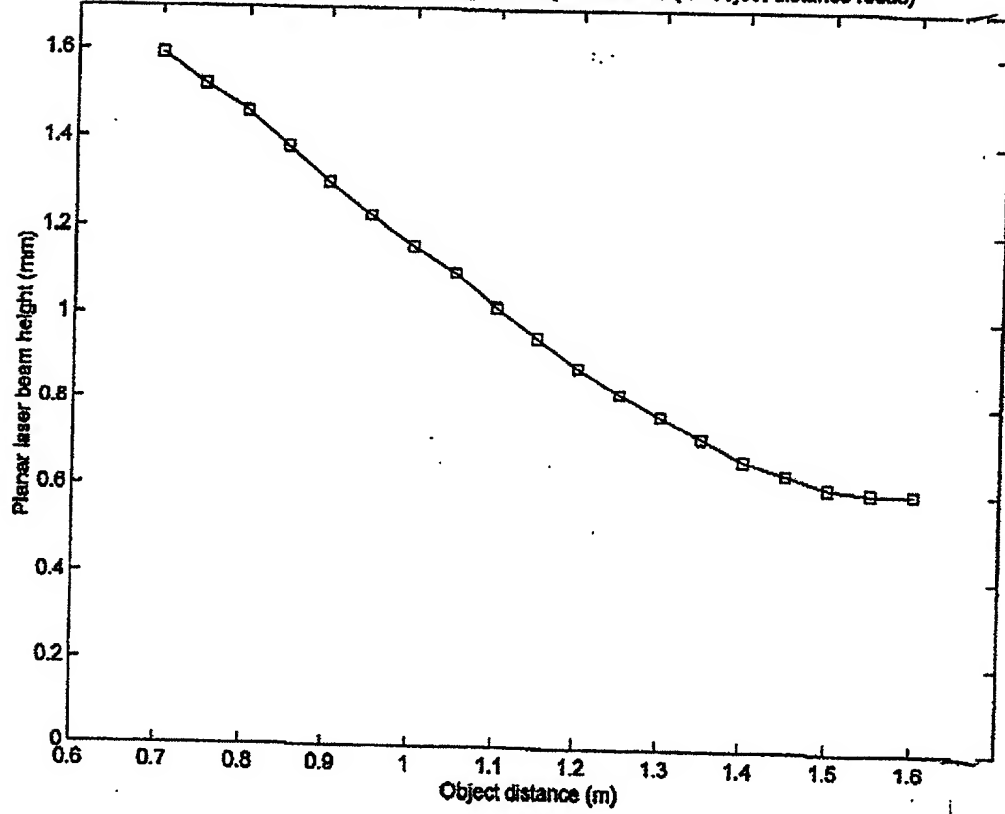


FIG 1M4

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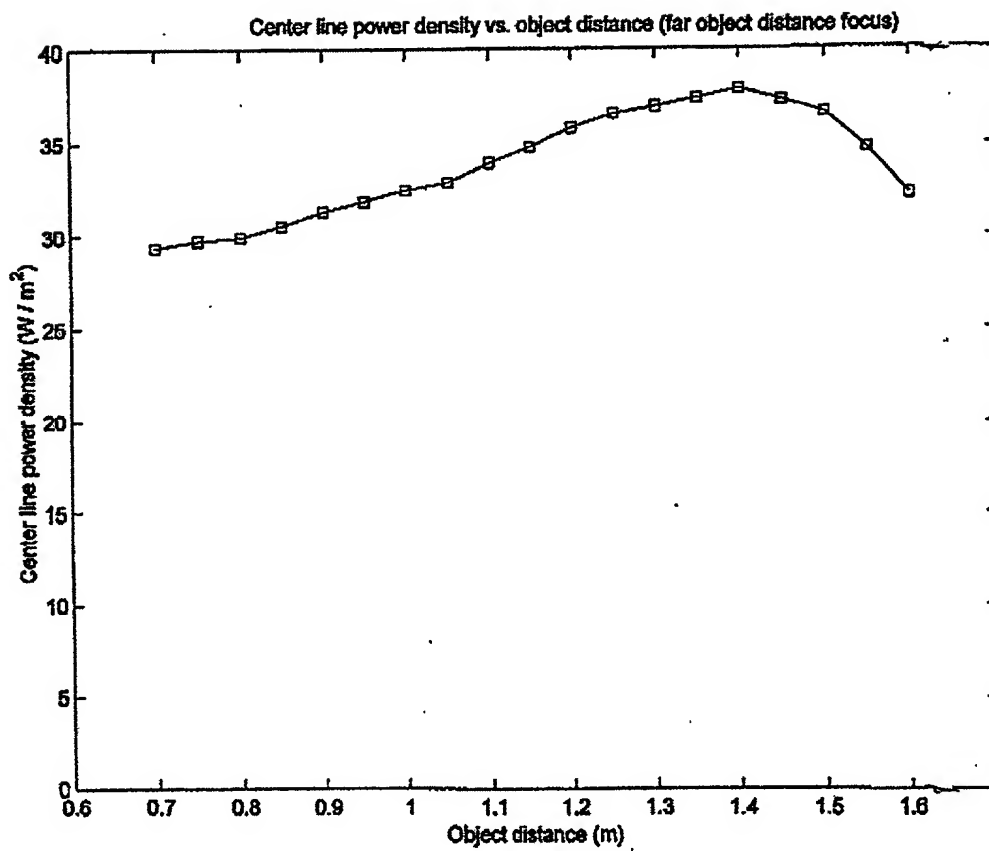


FIG. 1N

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Figure 6: Pixel power densities vs. object distance

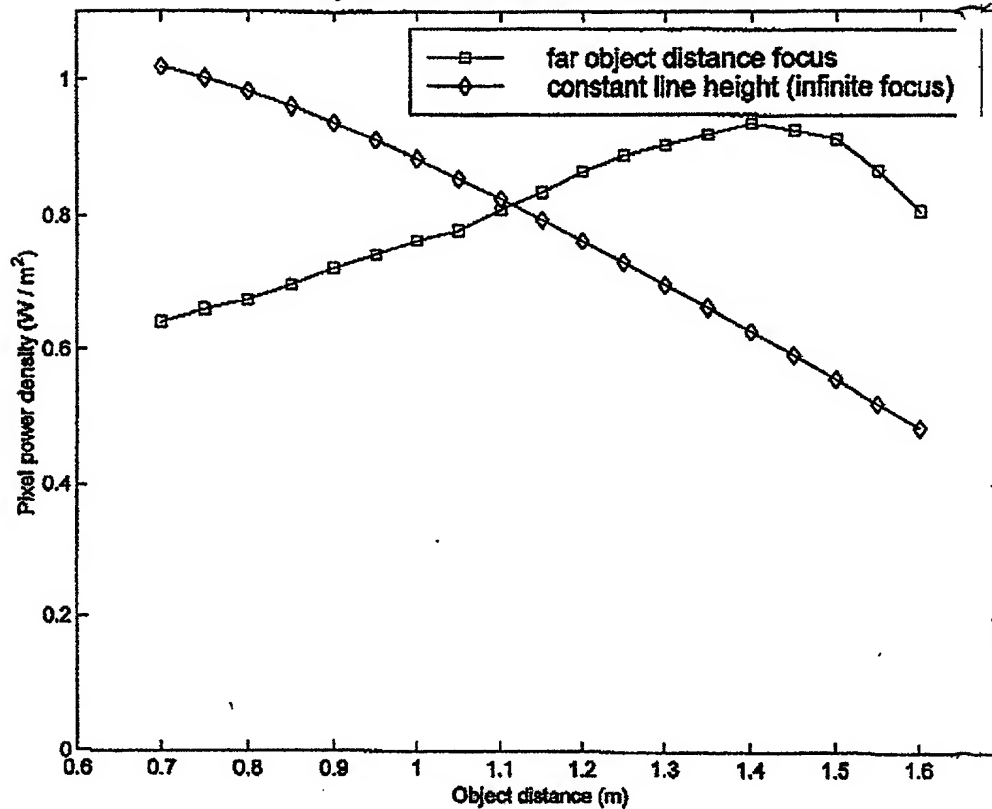


FIG. 10

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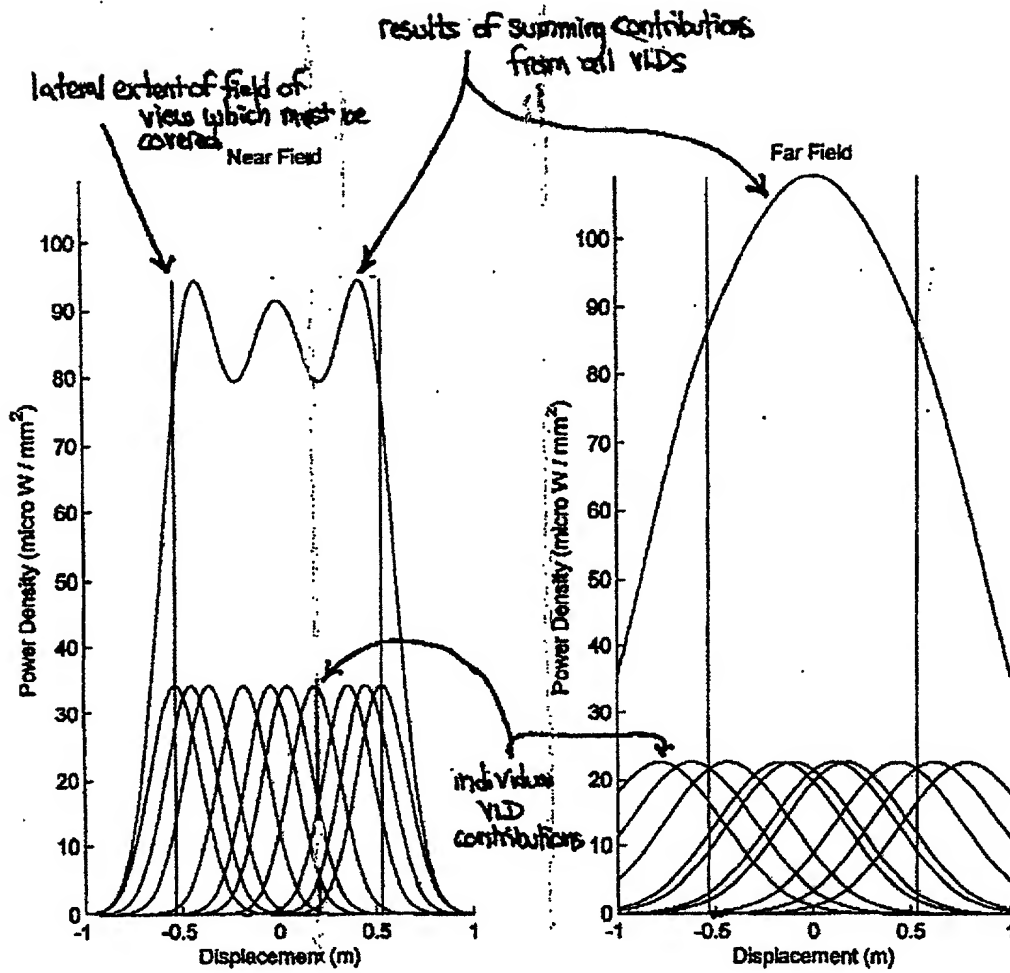


FIG 1P1

FIG 1P2

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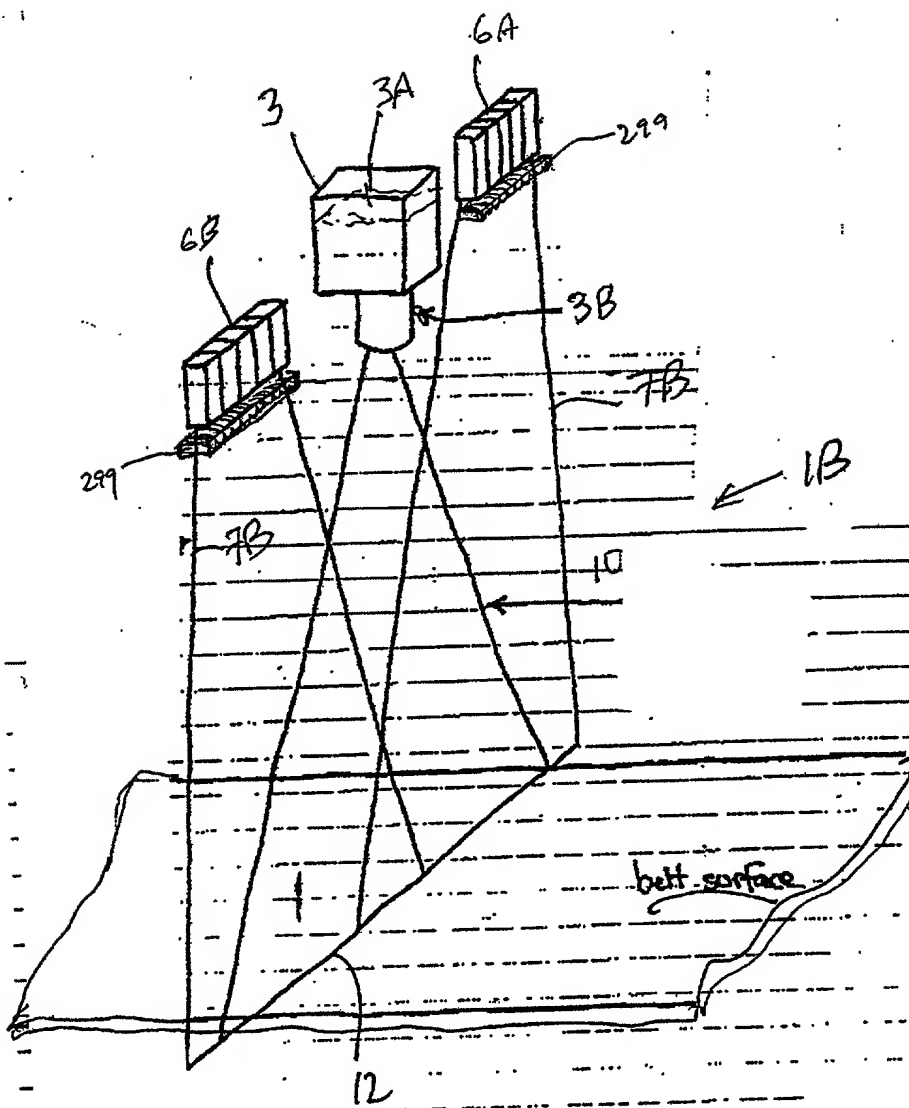


FIG. 101

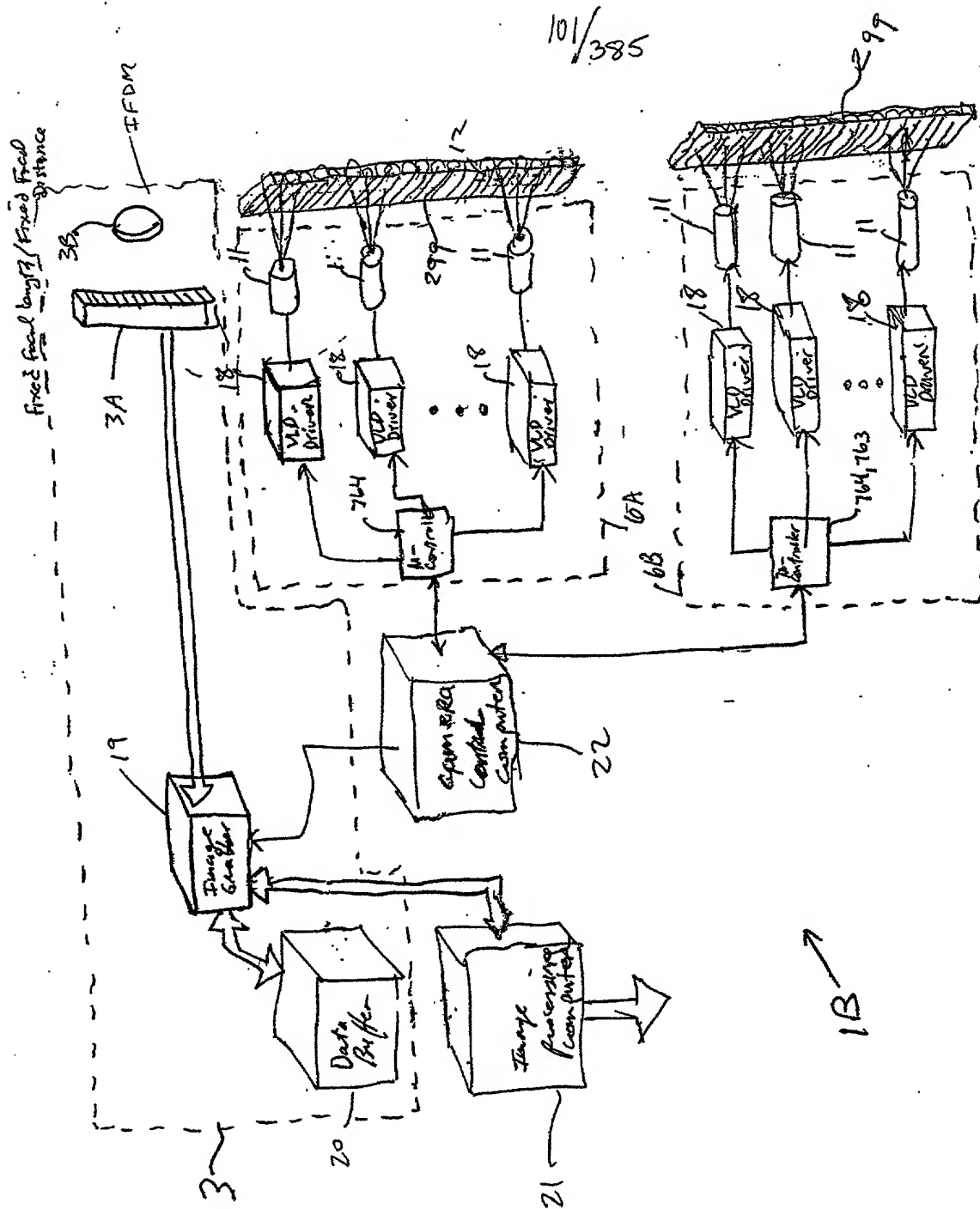
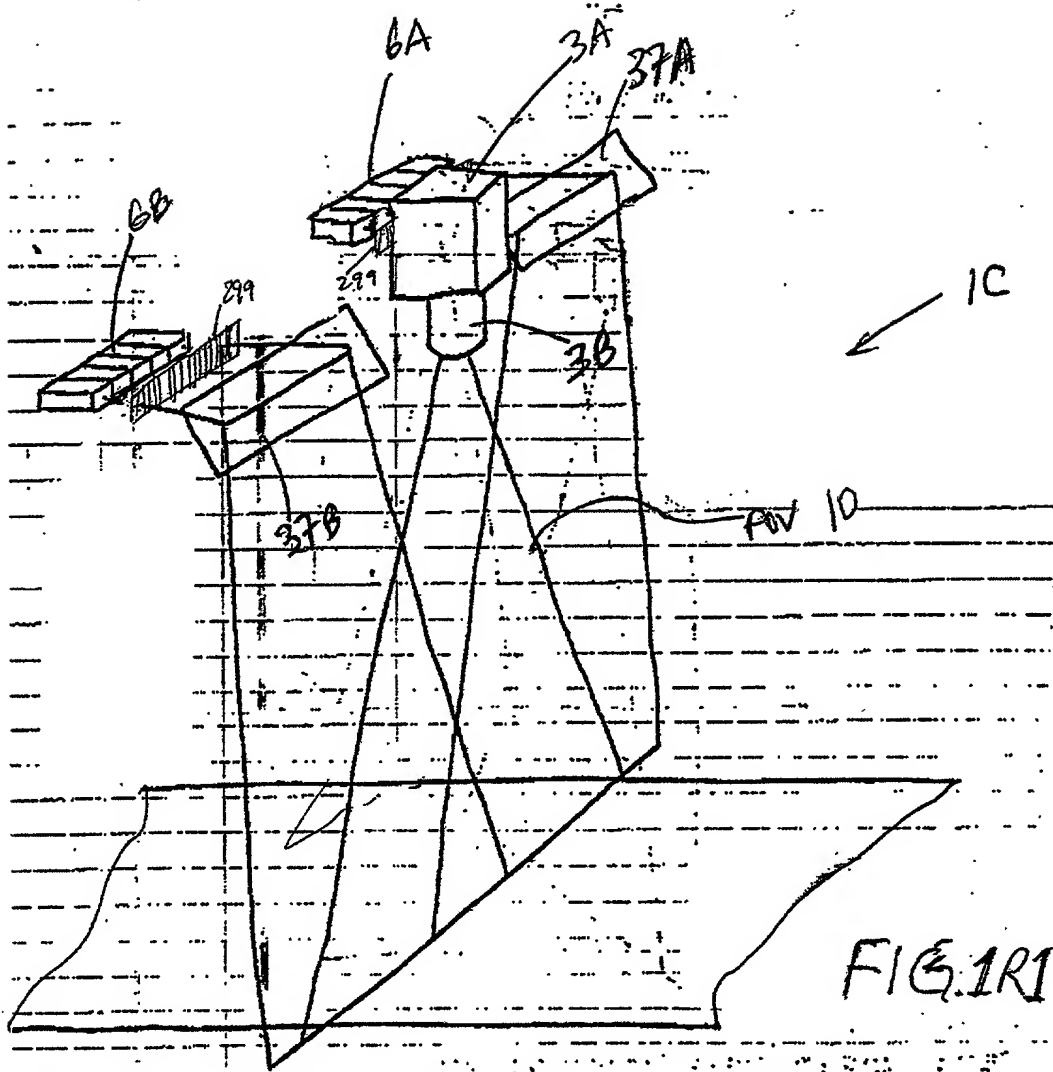


FIG. 102

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DATE	NAME	AMOUNT	DATE	NAME	AMOUNT
1882	Wm. H. H.	100	1882	Wm. H. H.	100
1883	Wm. H. H.	100	1883	Wm. H. H.	100
1884	Wm. H. H.	100	1884	Wm. H. H.	100
1885	Wm. H. H.	100	1885	Wm. H. H.	100
1886	Wm. H. H.	100	1886	Wm. H. H.	100
1887	Wm. H. H.	100	1887	Wm. H. H.	100
1888	Wm. H. H.	100	1888	Wm. H. H.	100
1889	Wm. H. H.	100	1889	Wm. H. H.	100
1890	Wm. H. H.	100	1890	Wm. H. H.	100
1891	Wm. H. H.	100	1891	Wm. H. H.	100
1892	Wm. H. H.	100	1892	Wm. H. H.	100
1893	Wm. H. H.	100	1893	Wm. H. H.	100
1894	Wm. H. H.	100	1894	Wm. H. H.	100
1895	Wm. H. H.	100	1895	Wm. H. H.	100
1896	Wm. H. H.	100	1896	Wm. H. H.	100
1897	Wm. H. H.	100	1897	Wm. H. H.	100
1898	Wm. H. H.	100	1898	Wm. H. H.	100
1899	Wm. H. H.	100	1899	Wm. H. H.	100
1900	Wm. H. H.	100	1900	Wm. H. H.	100

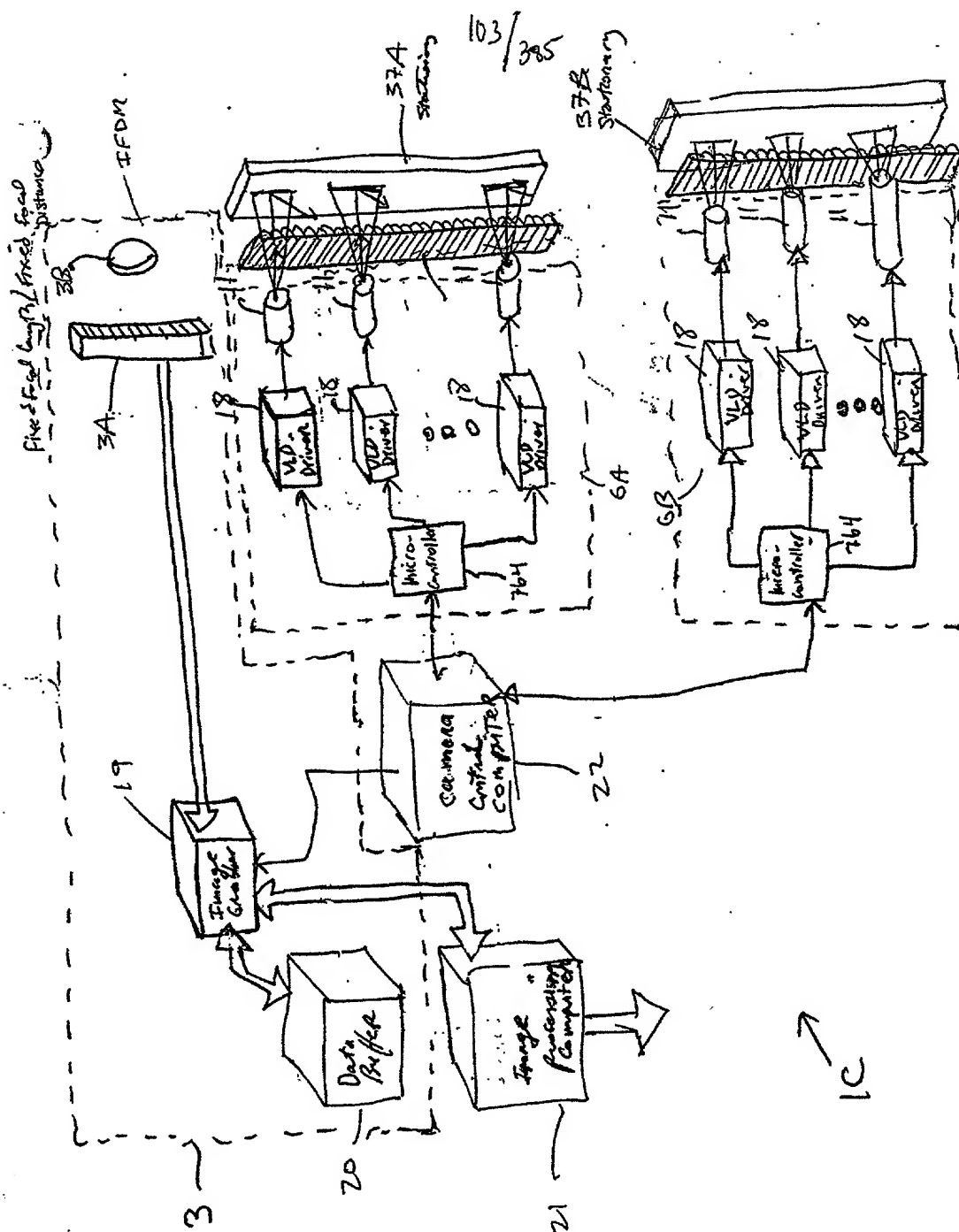
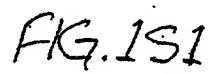


FIG. 1R2

DATE	NAME	AMOUNT	DATE	NAME	AMOUNT
1880	Wm. H. H. H.	100.00	1880	Wm. H. H. H.	100.00
1881	Wm. H. H. H.	100.00	1881	Wm. H. H. H.	100.00
1882	Wm. H. H. H.	100.00	1882	Wm. H. H. H.	100.00
1883	Wm. H. H. H.	100.00	1883	Wm. H. H. H.	100.00
1884	Wm. H. H. H.	100.00	1884	Wm. H. H. H.	100.00
1885	Wm. H. H. H.	100.00	1885	Wm. H. H. H.	100.00
1886	Wm. H. H. H.	100.00	1886	Wm. H. H. H.	100.00
1887	Wm. H. H. H.	100.00	1887	Wm. H. H. H.	100.00
1888	Wm. H. H. H.	100.00	1888	Wm. H. H. H.	100.00
1889	Wm. H. H. H.	100.00	1889	Wm. H. H. H.	100.00
1890	Wm. H. H. H.	100.00	1890	Wm. H. H. H.	100.00
1891	Wm. H. H. H.	100.00	1891	Wm. H. H. H.	100.00
1892	Wm. H. H. H.	100.00	1892	Wm. H. H. H.	100.00
1893	Wm. H. H. H.	100.00	1893	Wm. H. H. H.	100.00
1894	Wm. H. H. H.	100.00	1894	Wm. H. H. H.	100.00
1895	Wm. H. H. H.	100.00	1895	Wm. H. H. H.	100.00
1896	Wm. H. H. H.	100.00	1896	Wm. H. H. H.	100.00
1897	Wm. H. H. H.	100.00	1897	Wm. H. H. H.	100.00
1898	Wm. H. H. H.	100.00	1898	Wm. H. H. H.	100.00
1899	Wm. H. H. H.	100.00	1899	Wm. H. H. H.	100.00
1900	Wm. H. H. H.	100.00	1900	Wm. H. H. H.	100.00



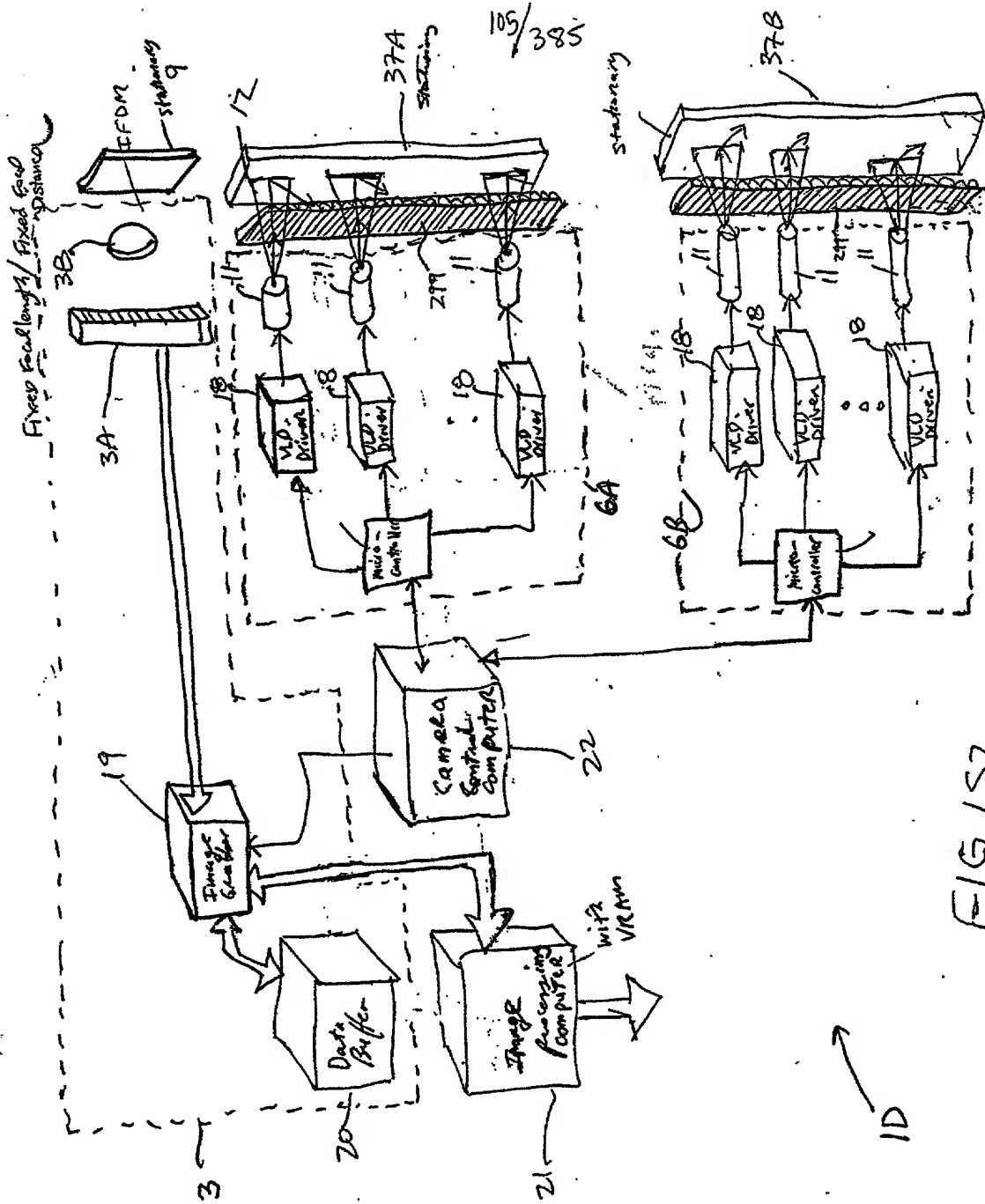


FIG. 1S2

1D

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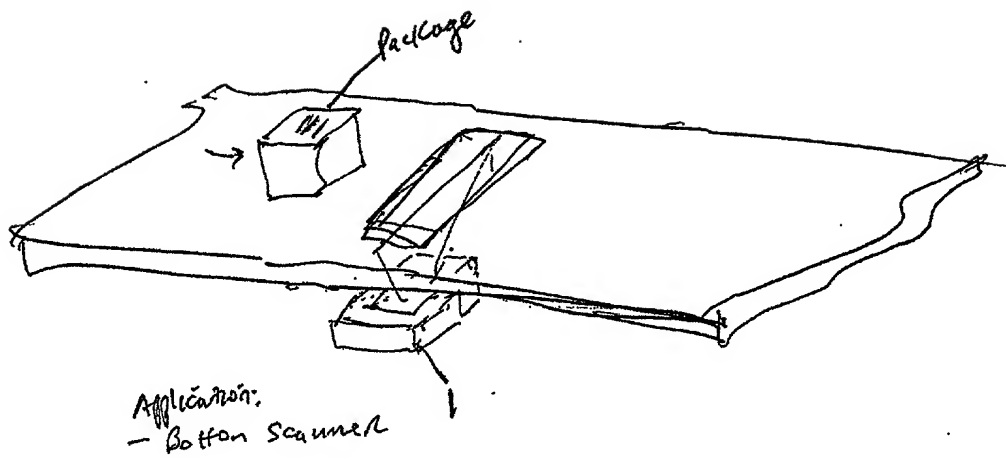


FIG 1T

[illegible]

FIG. VI.

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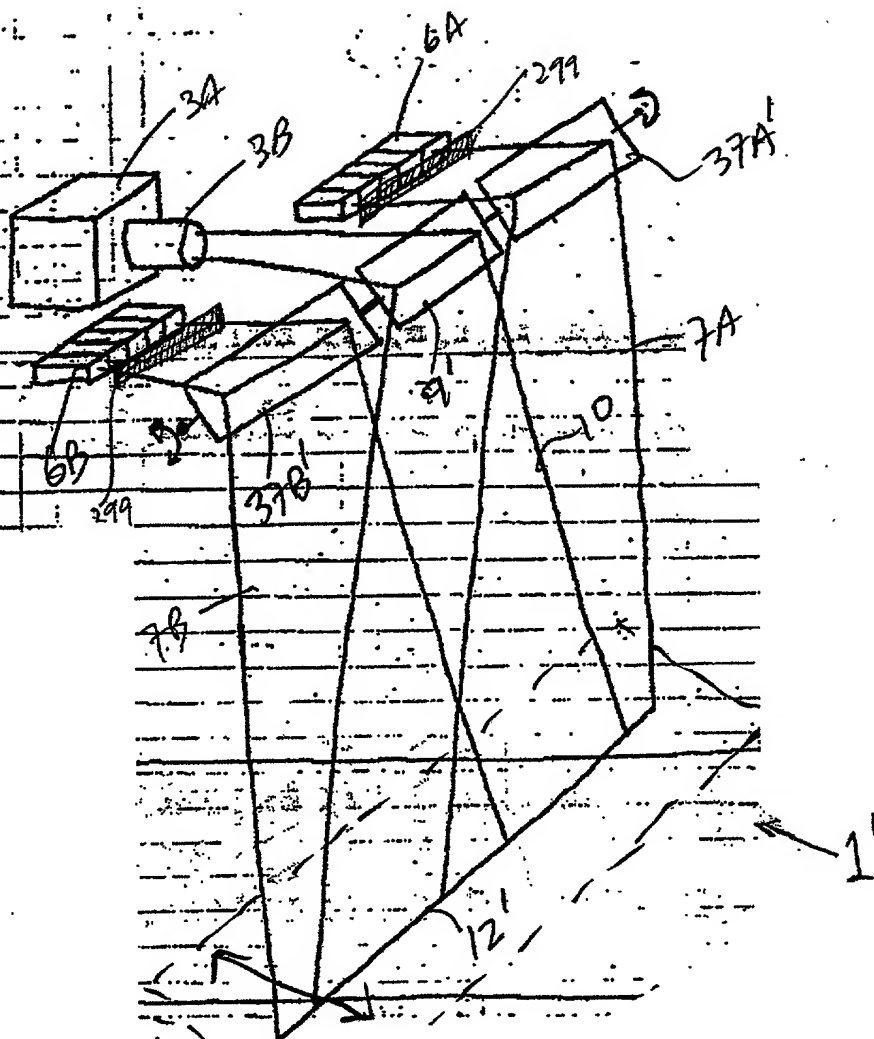
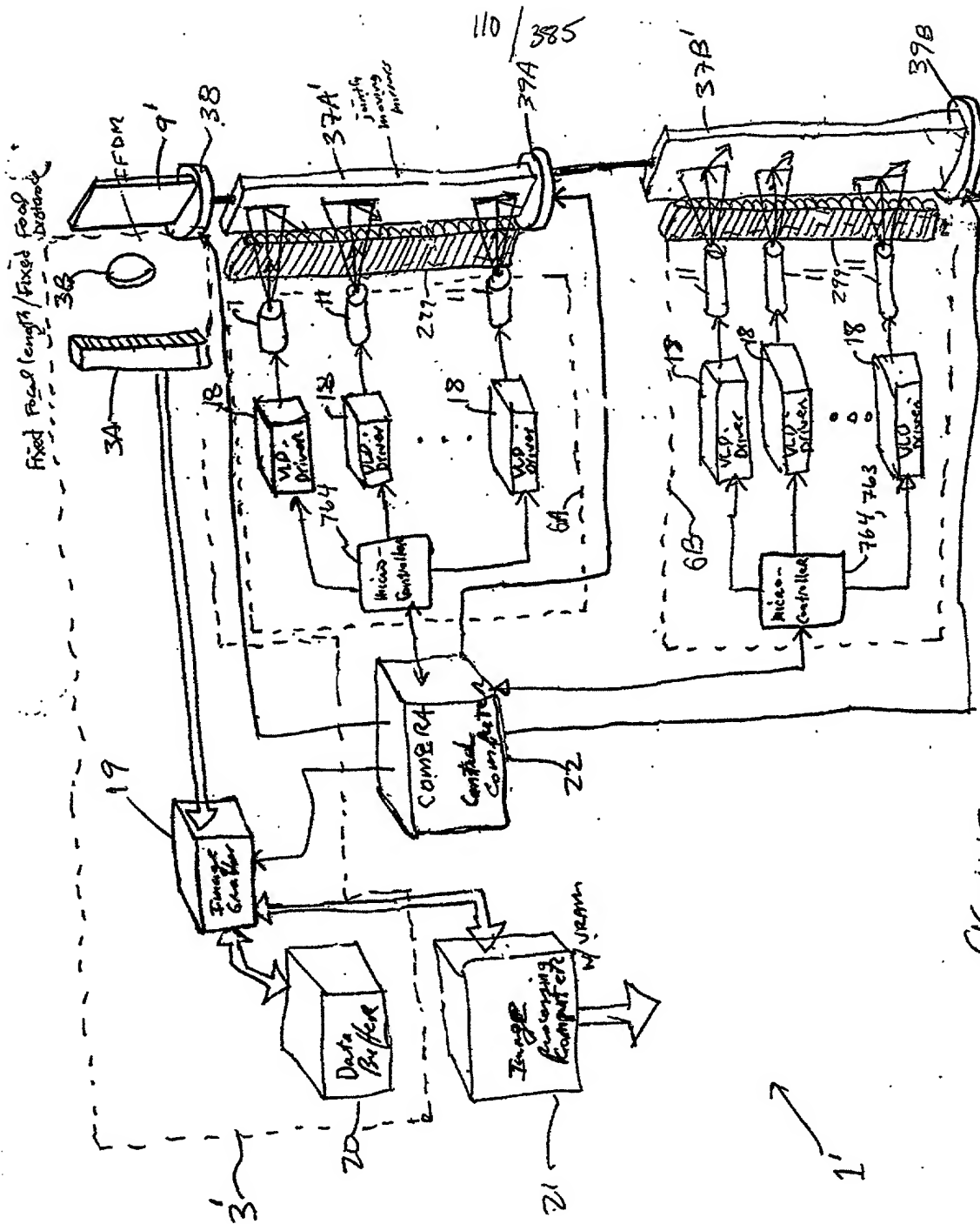


FIG. IV2

2-D
region
of
space



9

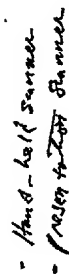
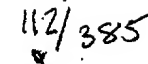


FIG. 1V4

10



40

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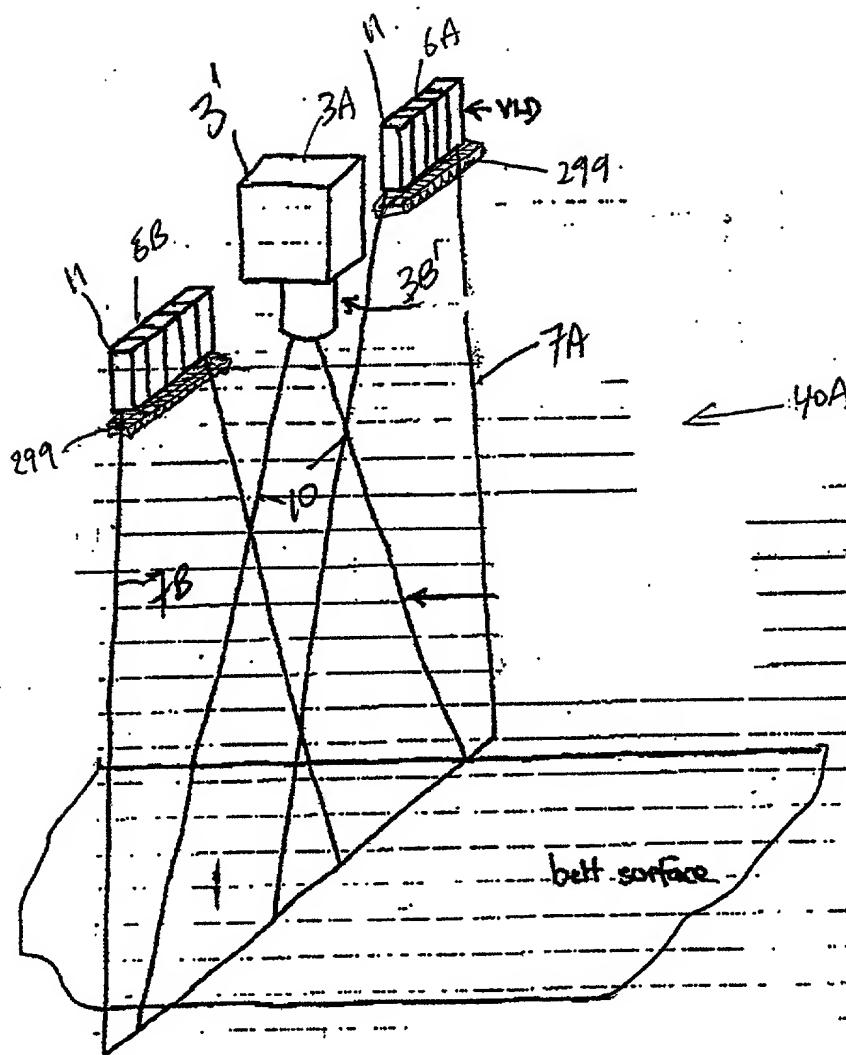


FIG. 2 B1

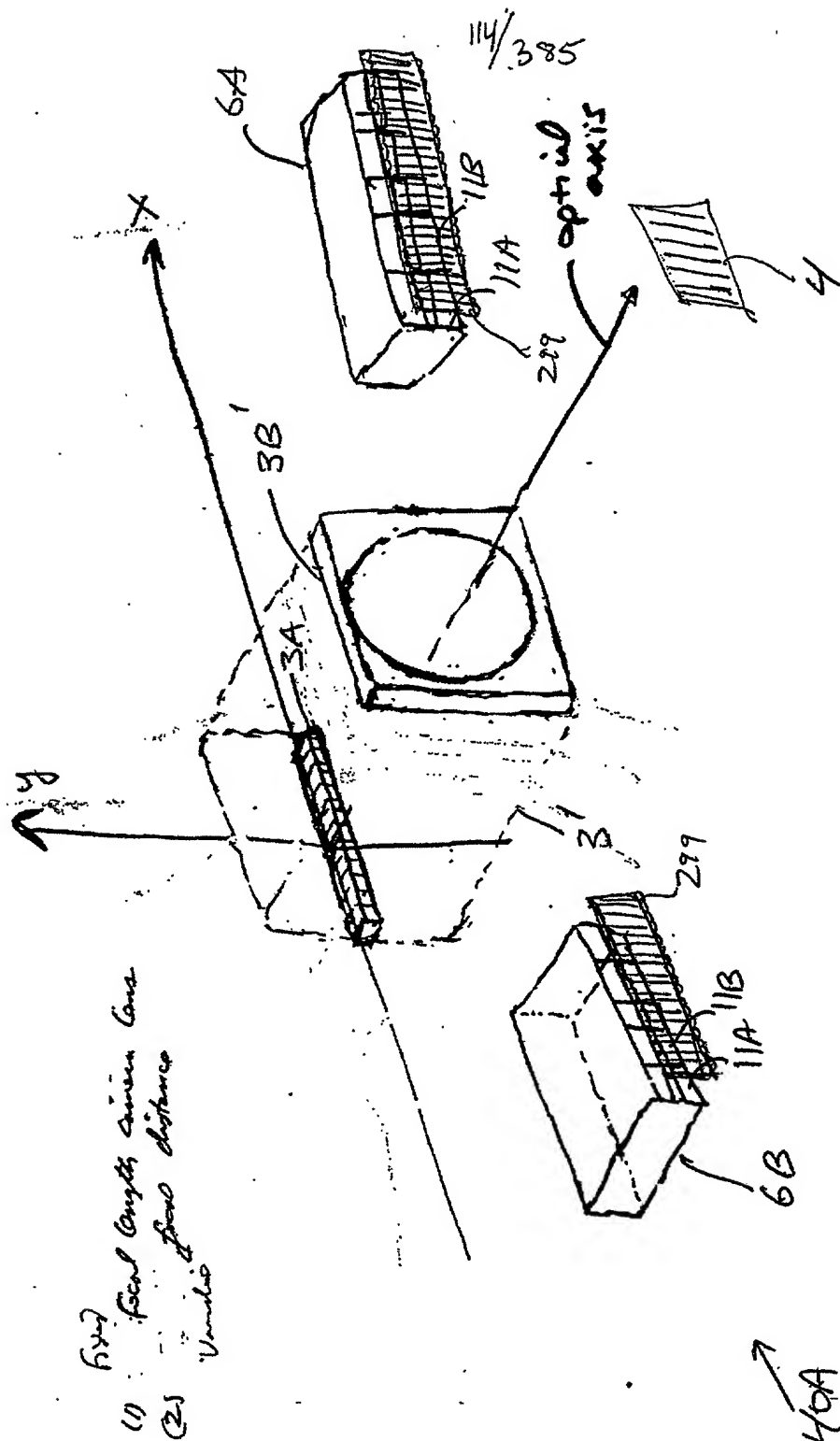
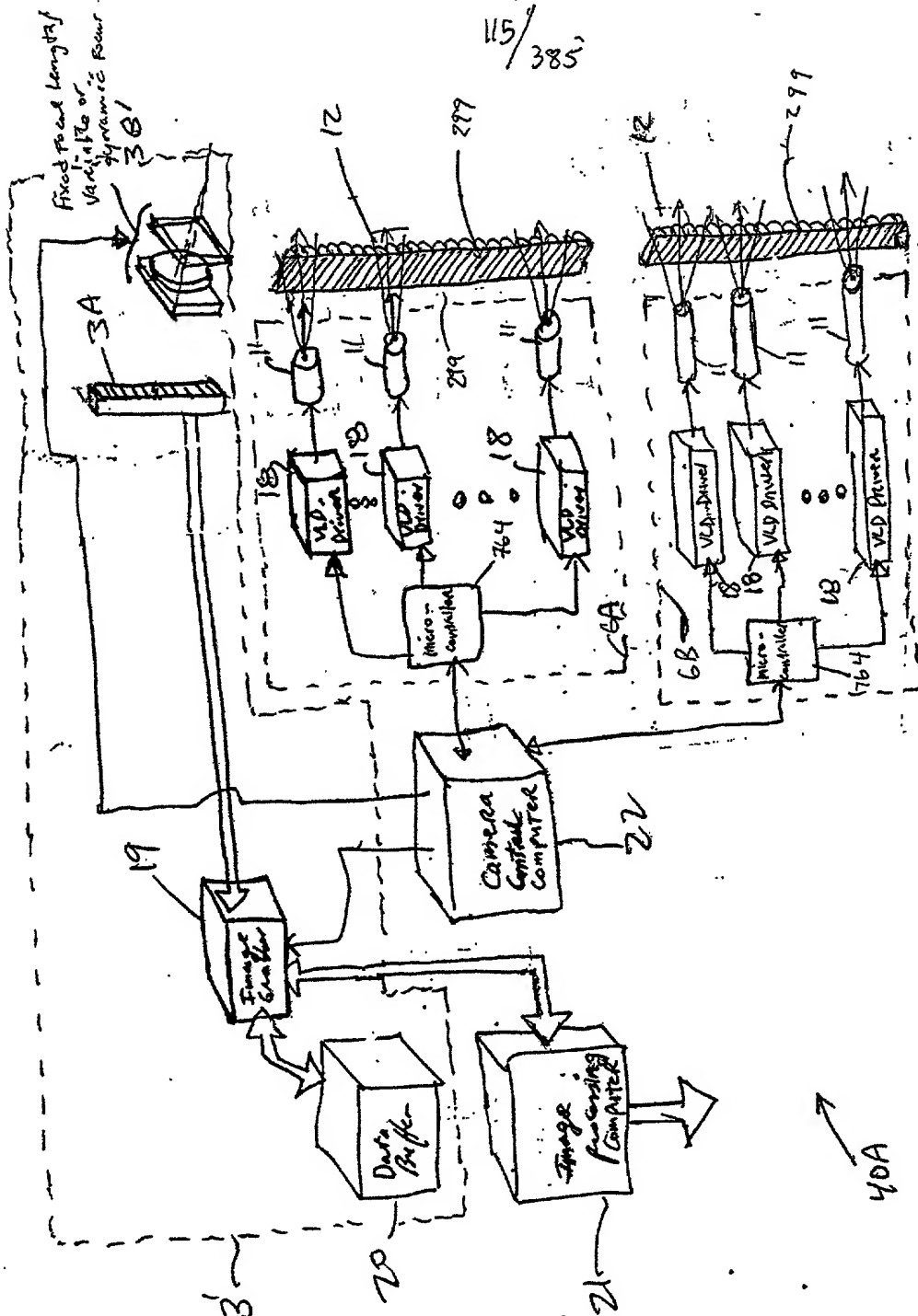


FIG. 2B2

$$\frac{115}{385}$$


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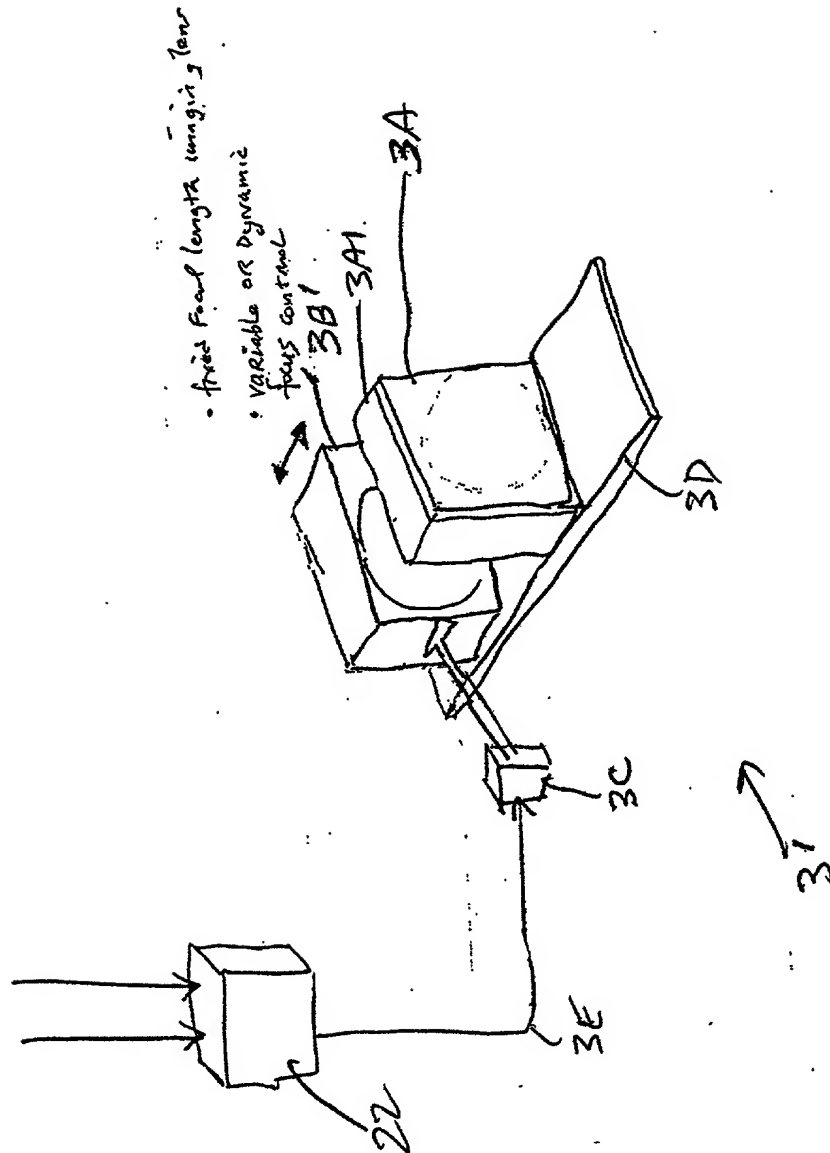
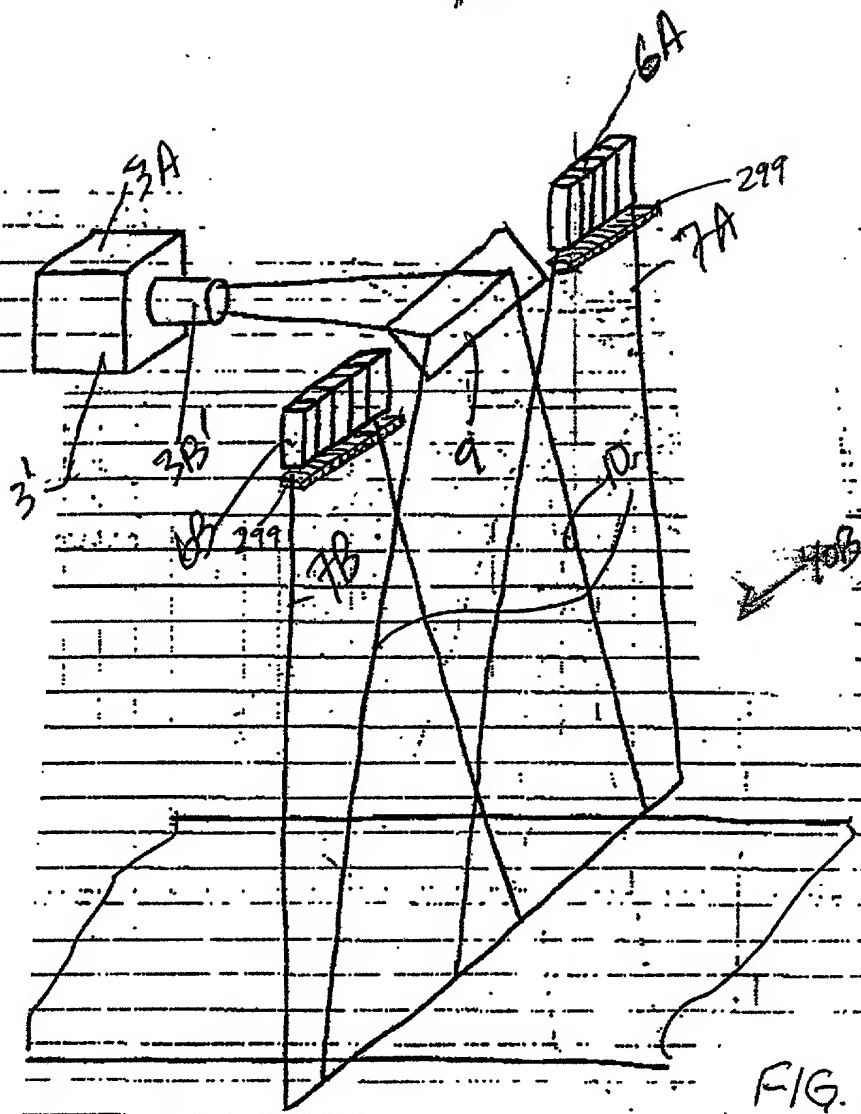


FIG. 2C2

$$117 \overline{) 385}$$


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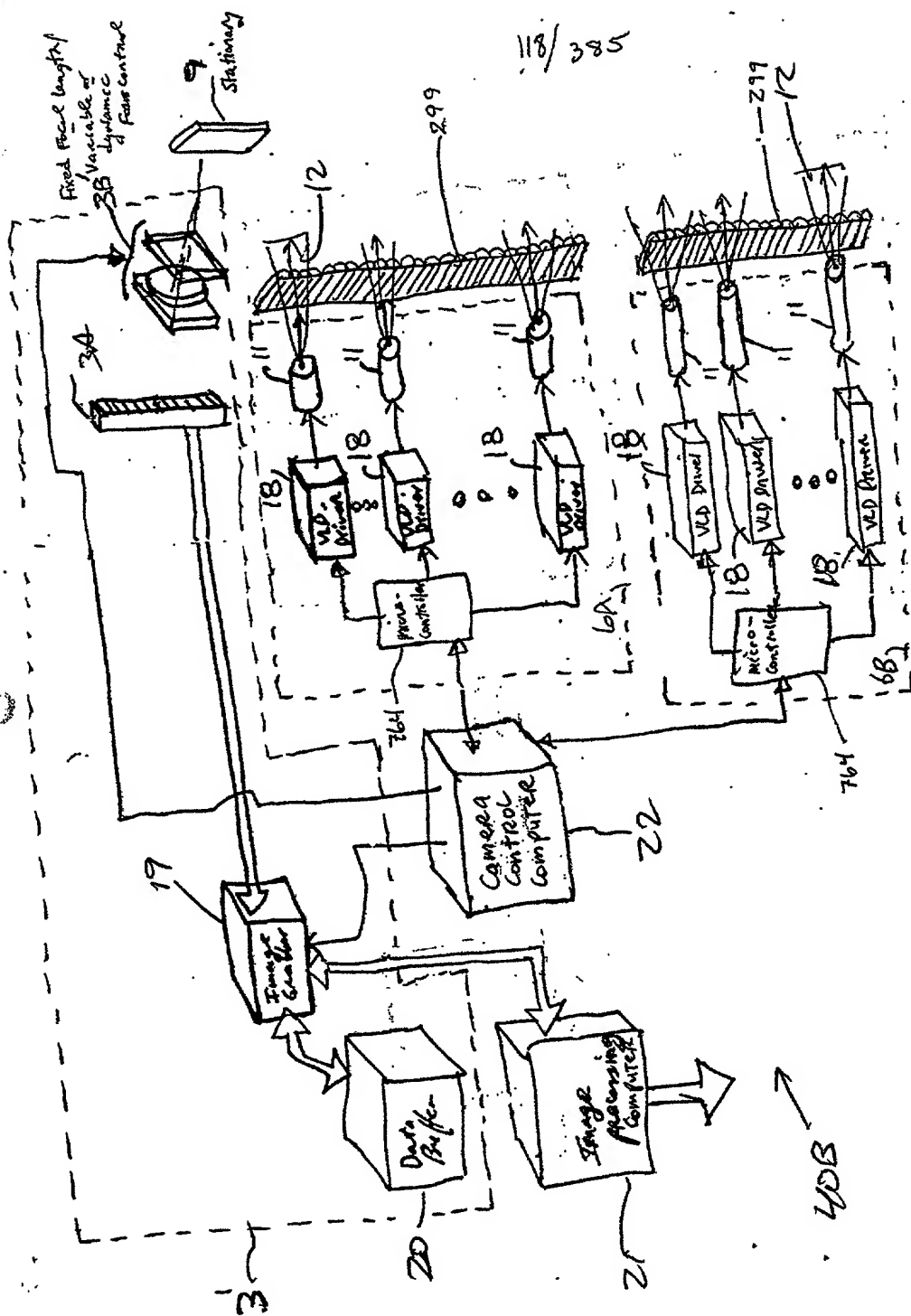
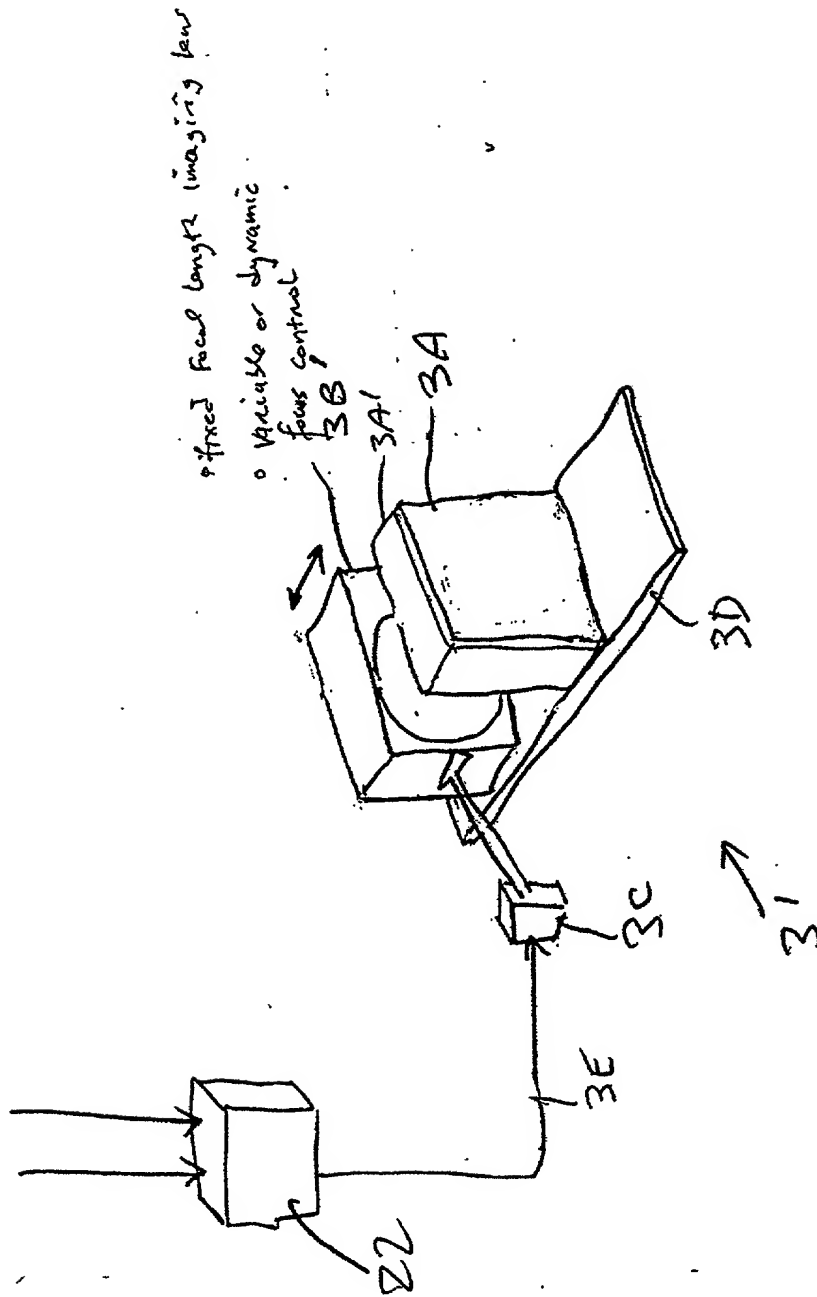


FIG. 2D2

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fixed focal length imaging lens
• Variable or dynamic
focus control

FIG. 2D3

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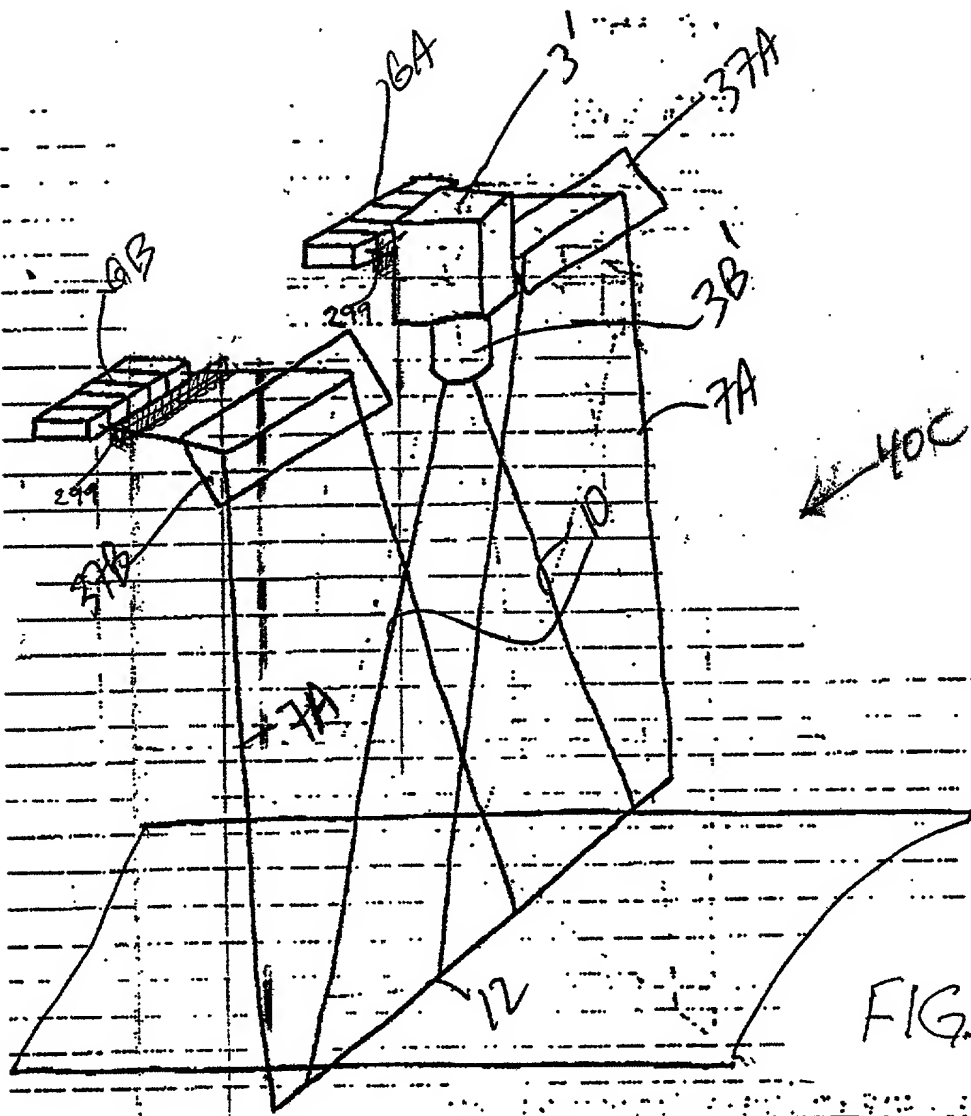


FIG. 2E1

DATE	DESCRIPTION	AMOUNT	BALANCE
1890	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1891	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1892	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1893	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1894	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1895	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1896	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1897	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1898	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1899	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		
	Oct 1		
	Nov 1		
	Dec 1		
1900	Jan 1		
	Feb 1		
	Mar 1		
	Apr 1		
	May 1		
	Jun 1		
	Jul 1		
	Aug 1		
	Sep 1		

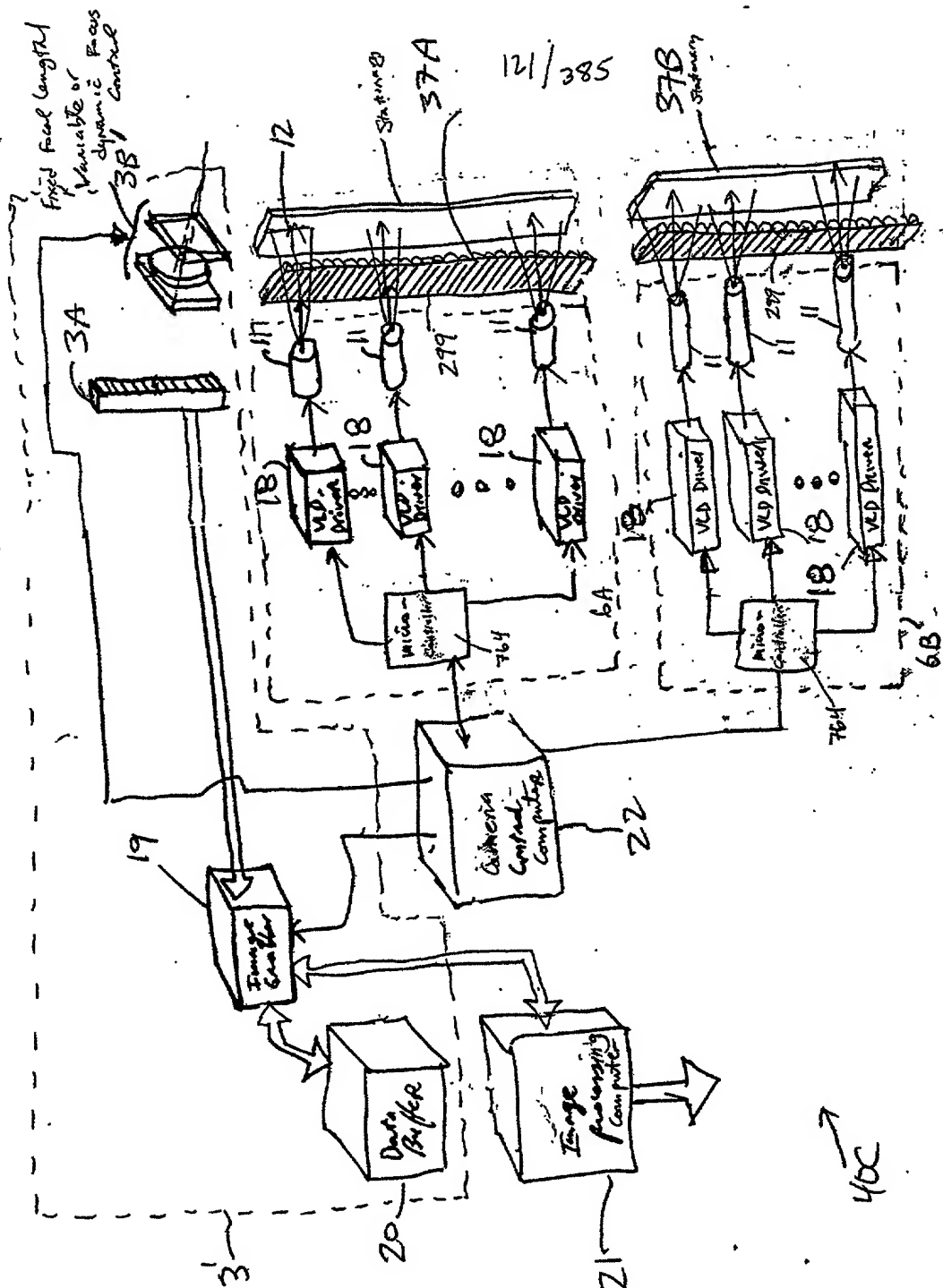


FIG. 2E2

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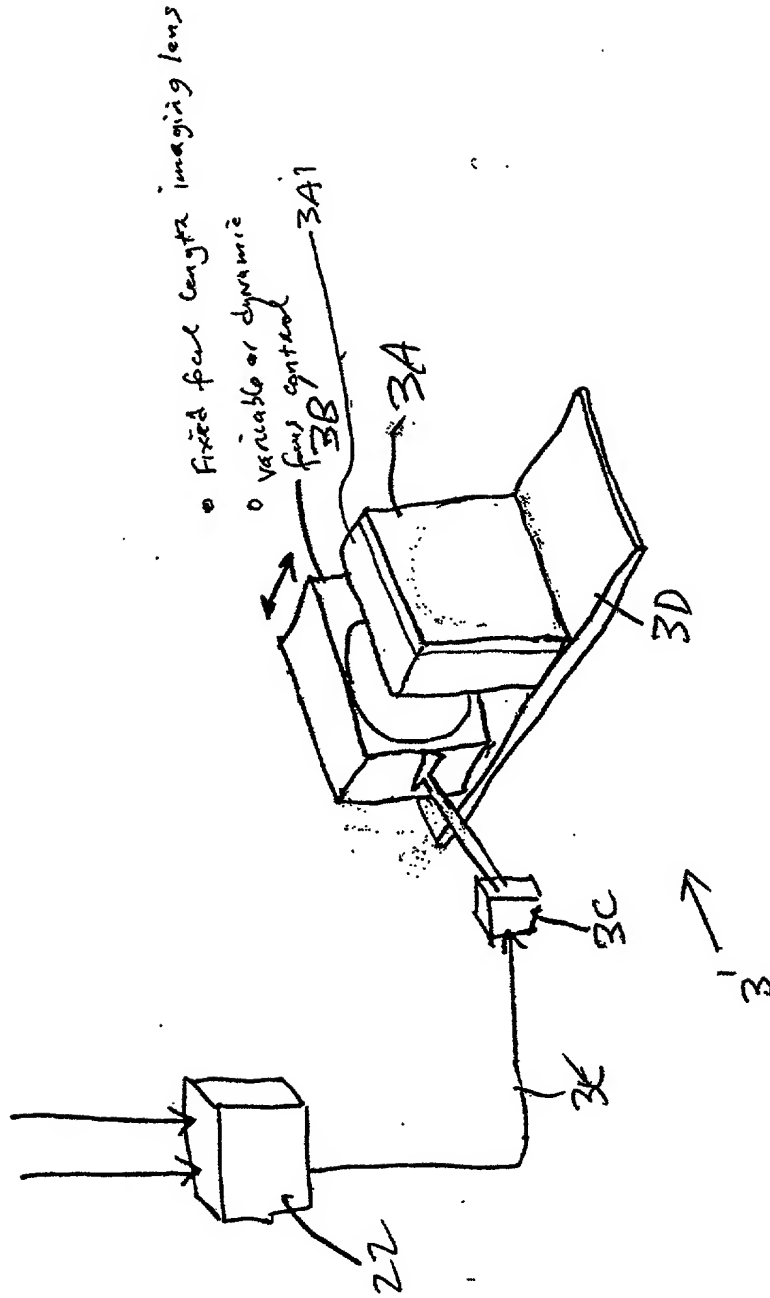


FIG. 2E3

2000-01-01 00:00:00

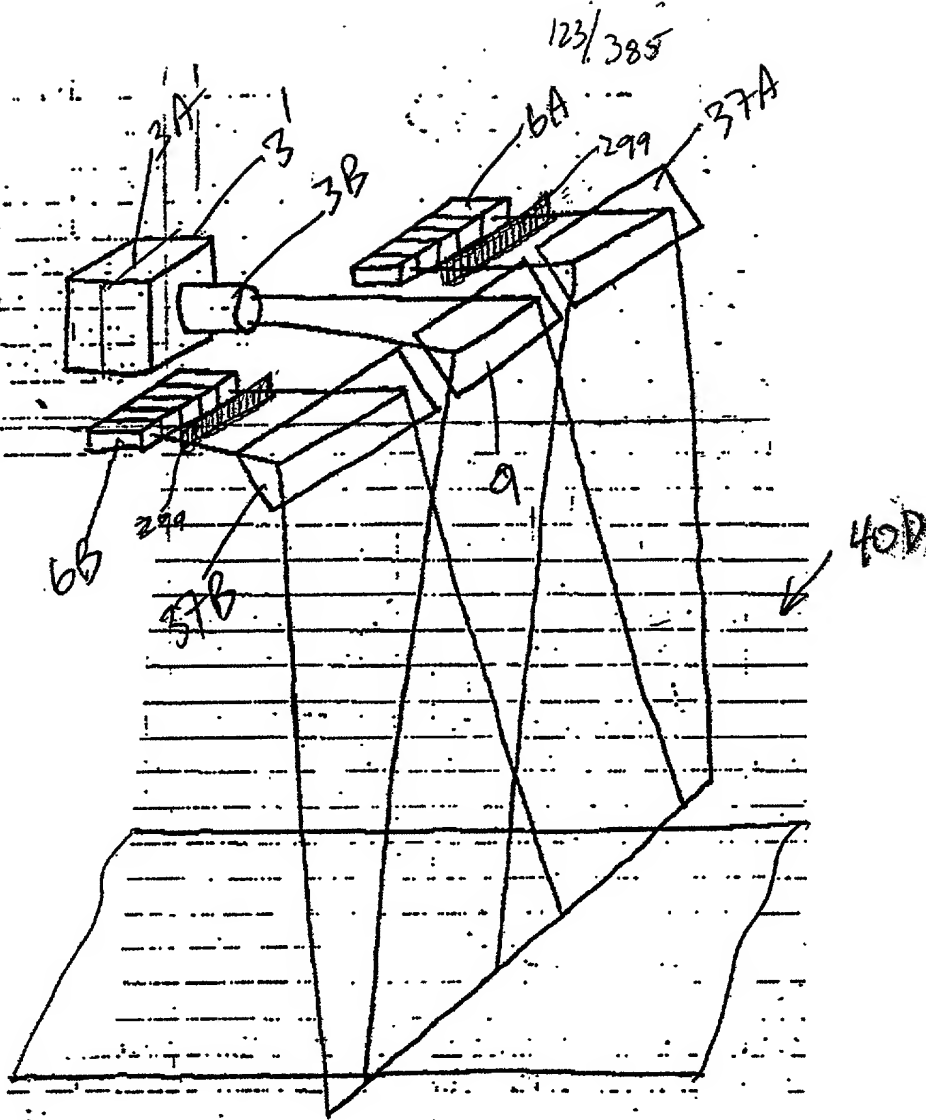
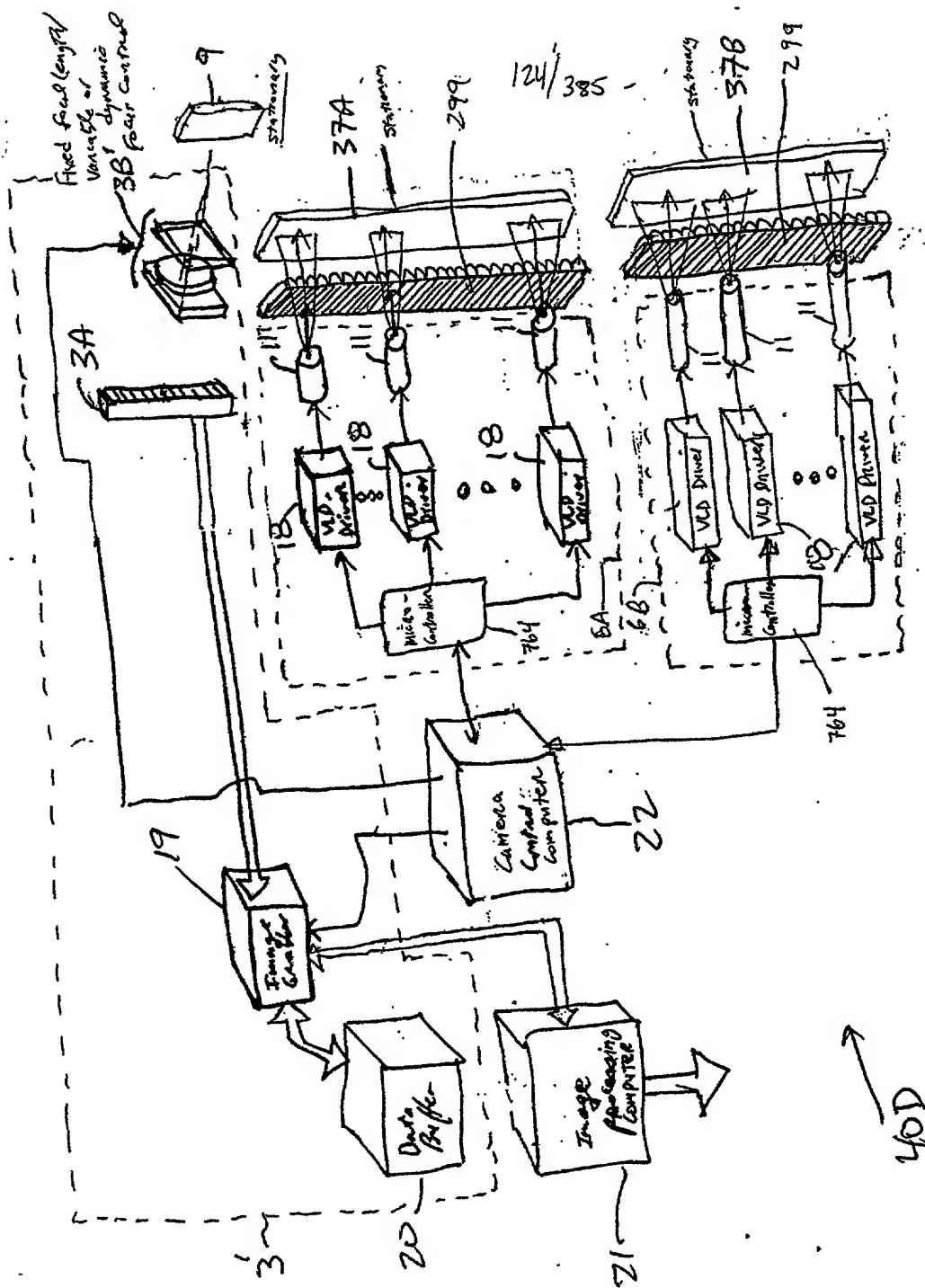


FIG. 2F1

[illegible]

40D

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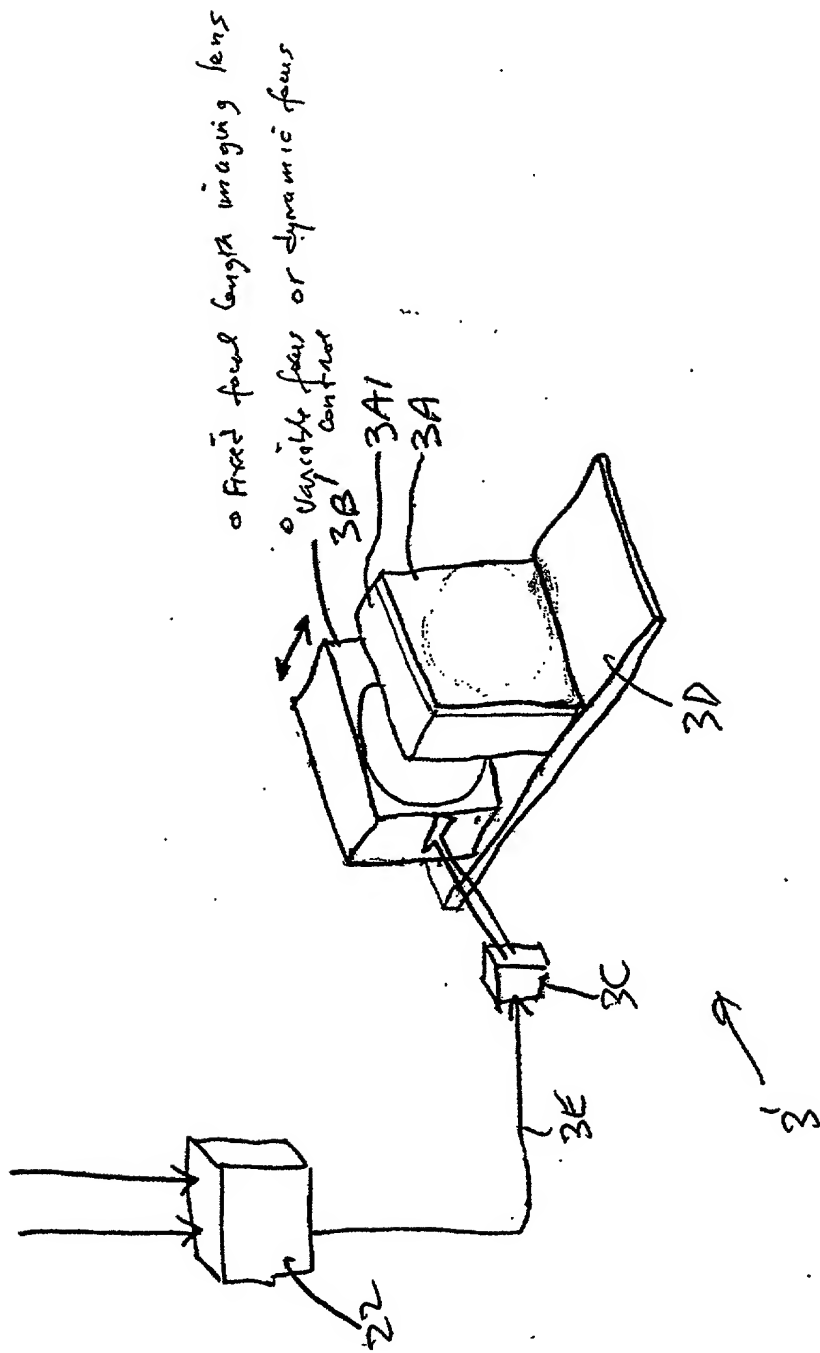


FIG. 2F3

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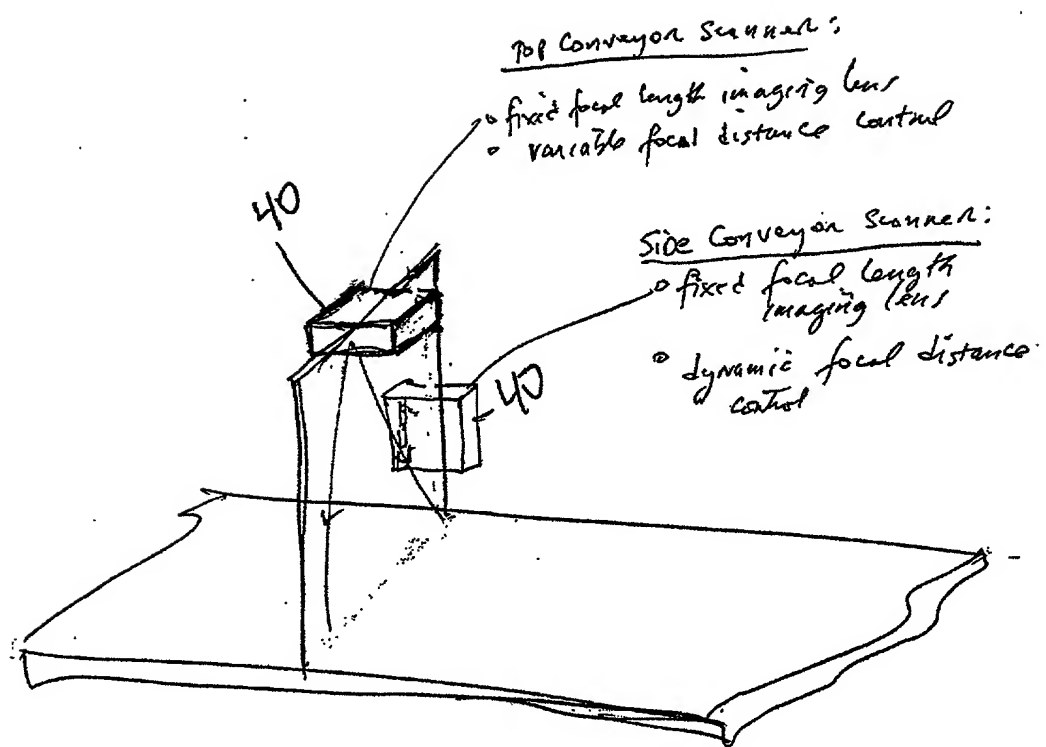
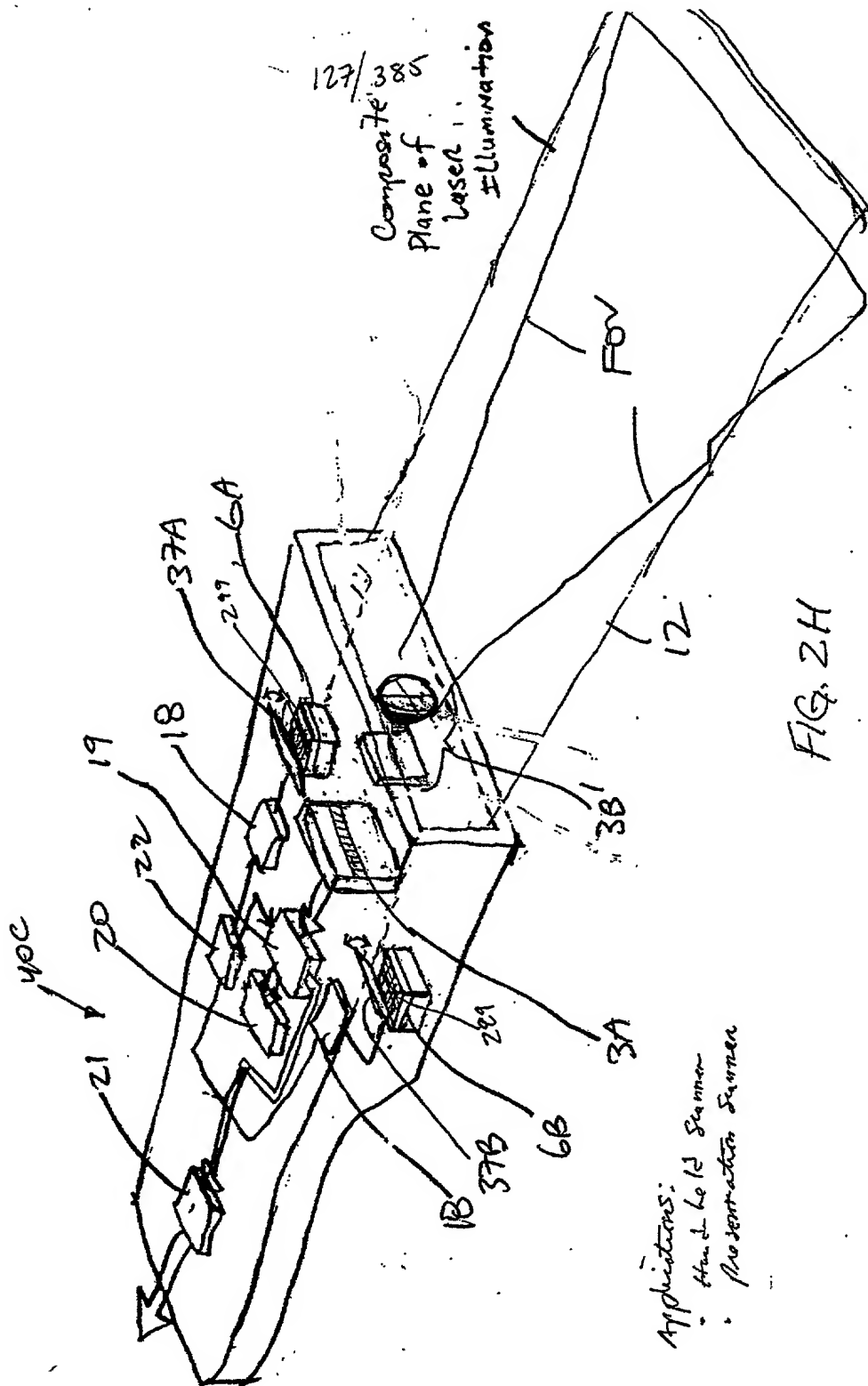


FIG. 2G



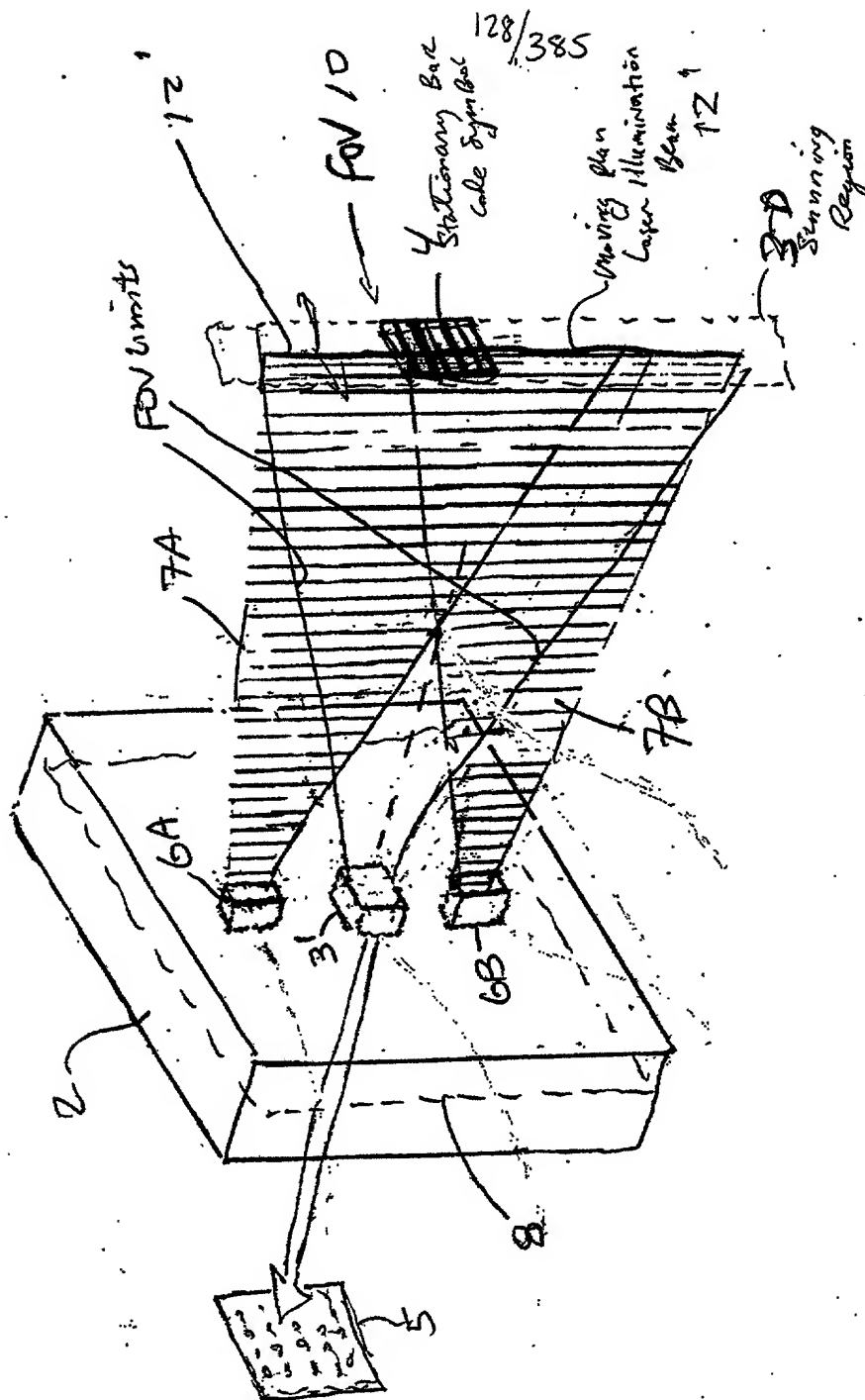


FIG. 211

	一	二	三	四	五	六	七	八	九	十	十一	十二	十三	十四	十五	十六	十七	十八	十九	二十	二十一	二十二	二十三	二十四	二十五	二十六	二十七	二十八	二十九	三十	三十一	三十二	三十三	三十四	三十五	三十六	三十七	三十八	三十九	四十	四十一	四十二	四十三	四十四	四十五	四十六	四十七	四十八	四十九	五十	五十一	五十二	五十三	五十四	五十五	五十六	五十七	五十八	五十九	六十	六十一	六十二	六十三	六十四	六十五	六十六	六十七	六十八	六十九	七十	七十一	七十二	七十三	七十四	七十五	七十六	七十七	七十八	七十九	八十	八十一	八十二	八十三	八十四	八十五	八十六	八十七	八十八	八十九	九十	九十一	九十二	九十三	九十四	九十五	九十六	九十七	九十八	九十九	一百
一	二	三	四	五	六	七	八	九	十	十一	十二	十三	十四	十五	十六	十七	十八	十九	二十	二十一	二十二	二十三	二十四	二十五	二十六	二十七	二十八	二十九	三十	三十一	三十二	三十三	三十四	三十五	三十六	三十七	三十八	三十九	四十	四十一	四十二	四十三	四十四	四十五	四十六	四十七	四十八	四十九	五十	五十一	五十二	五十三	五十四	五十五	五十六	五十七	五十八	五十九	六十	六十一	六十二	六十三	六十四	六十五	六十六	六十七	六十八	六十九	七十	七十一	七十二	七十三	七十四	七十五	七十六	七十七	七十八	七十九	八十	八十一	八十二	八十三	八十四	八十五	八十六	八十七	八十八	八十九	九十	九十一	九十二	九十三	九十四	九十五	九十六	九十七	九十八	九十九	一百	

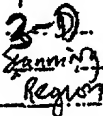


FIG. 212

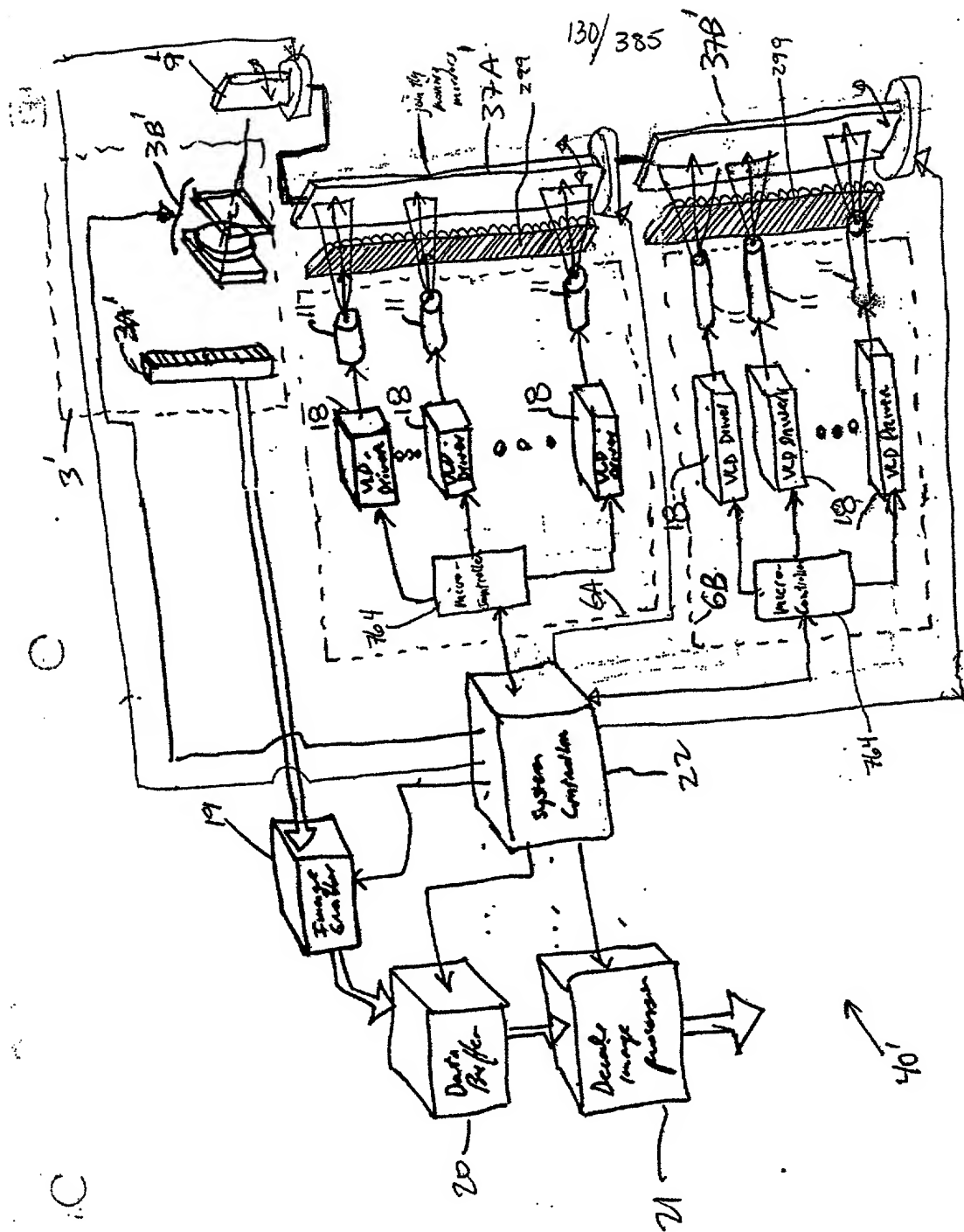


FIG. 2I3

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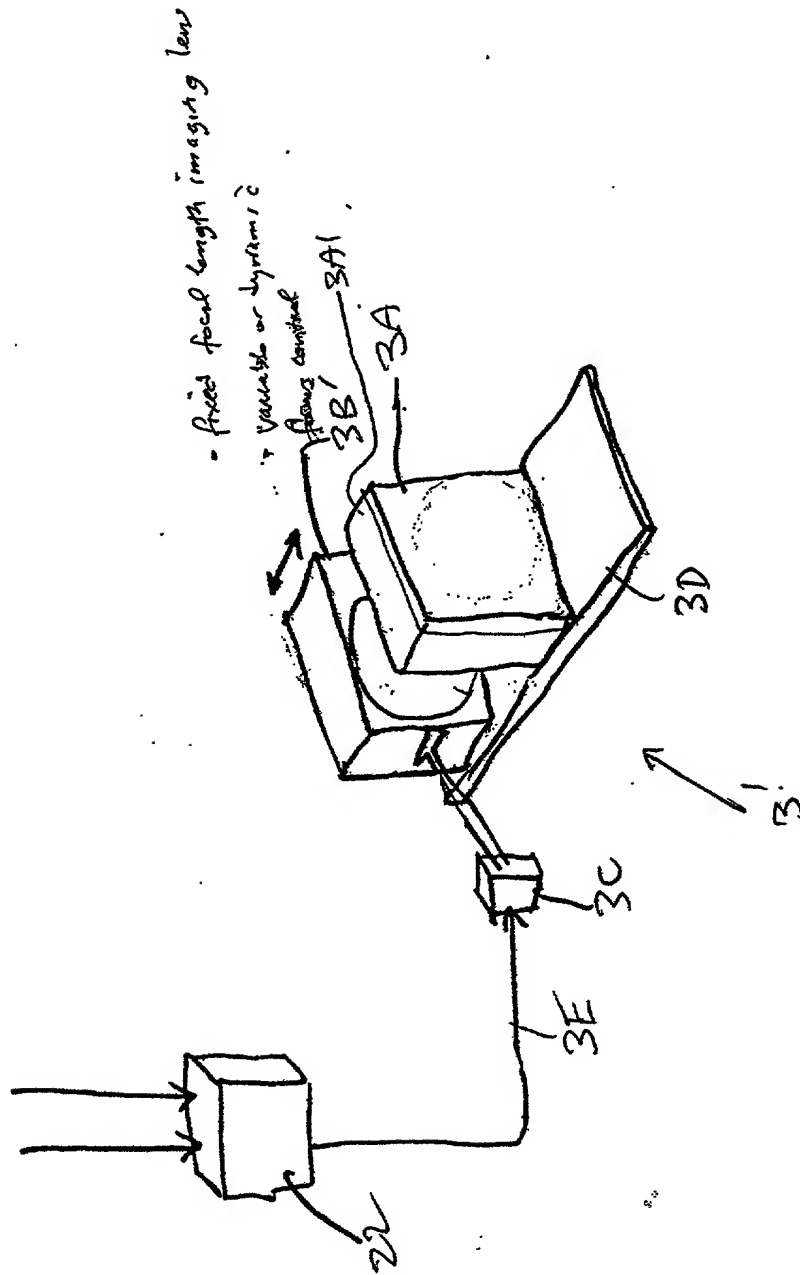
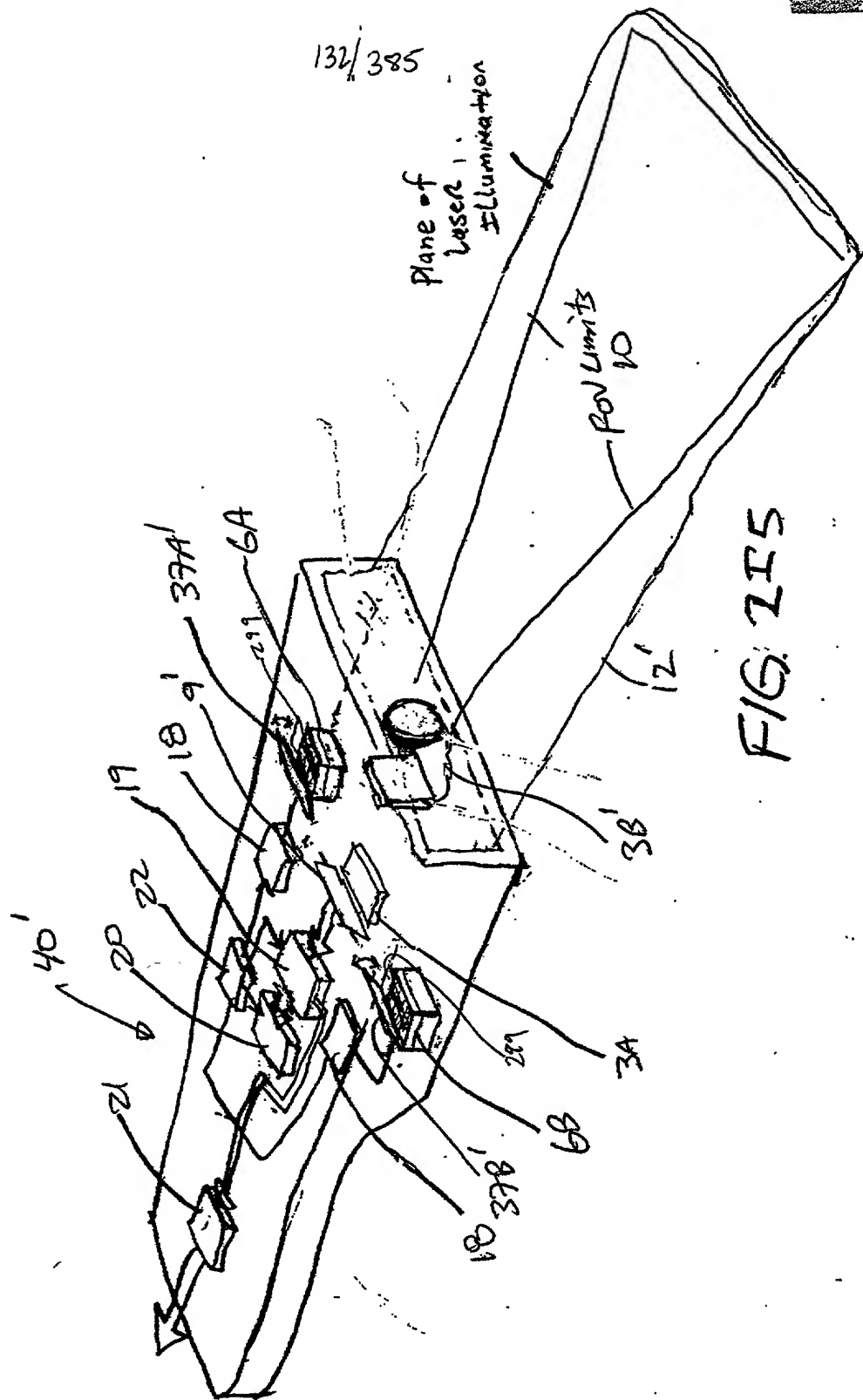


FIG. 2I4



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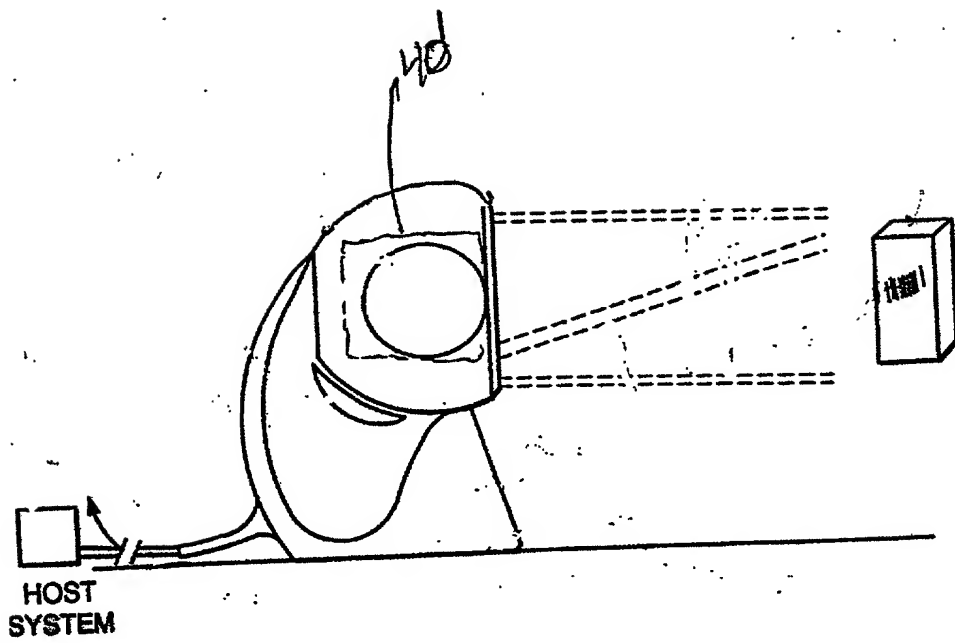


FIG. 2I6

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

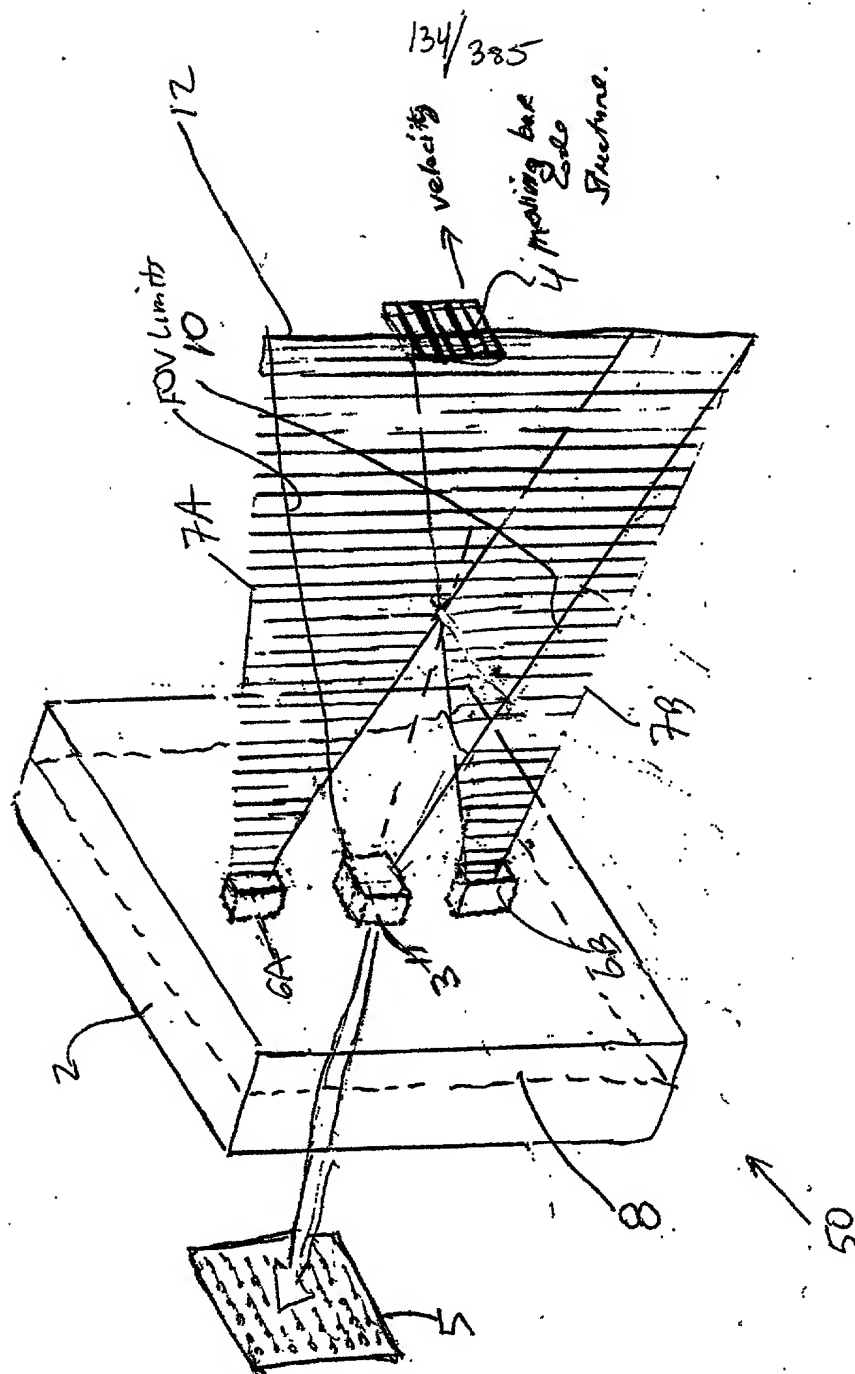


FIG 3A

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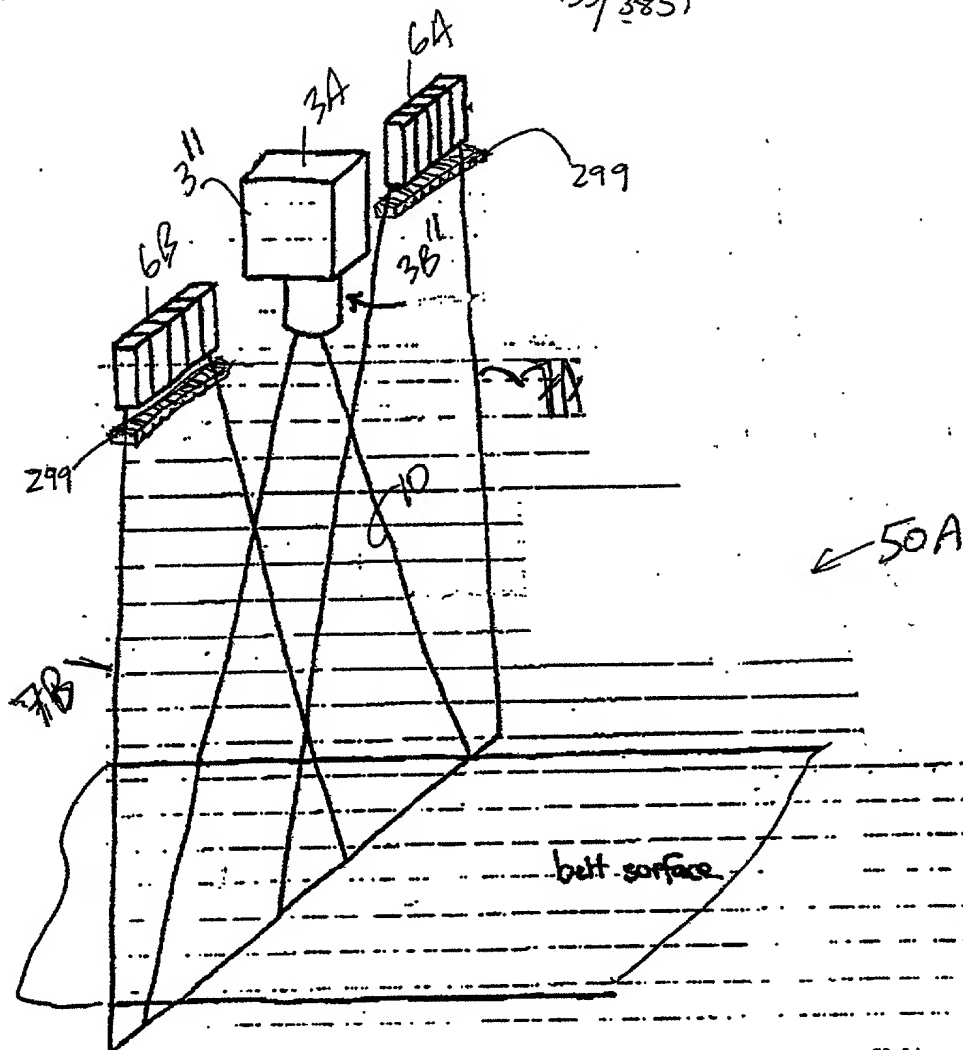


FIG. 3B1

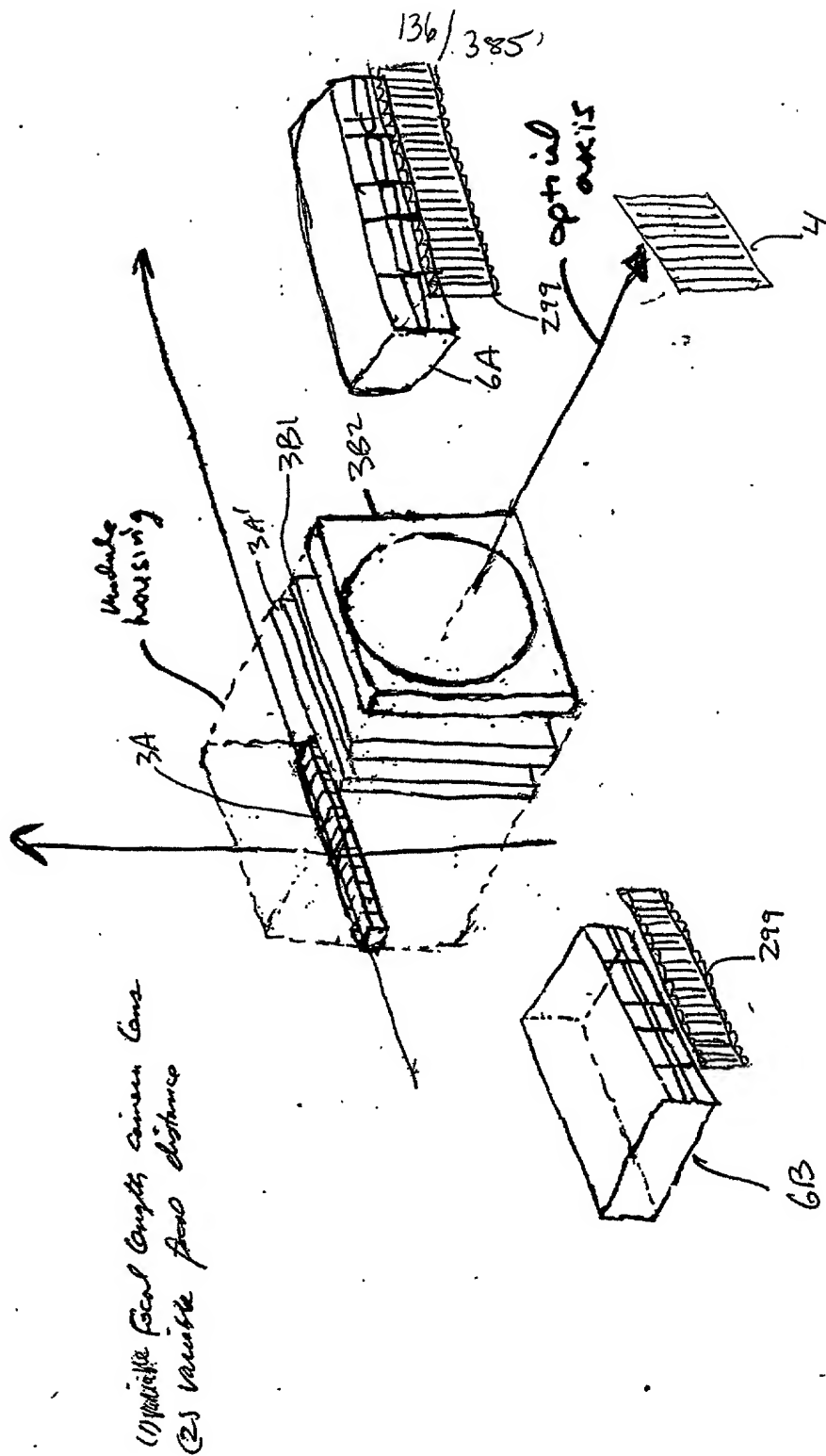
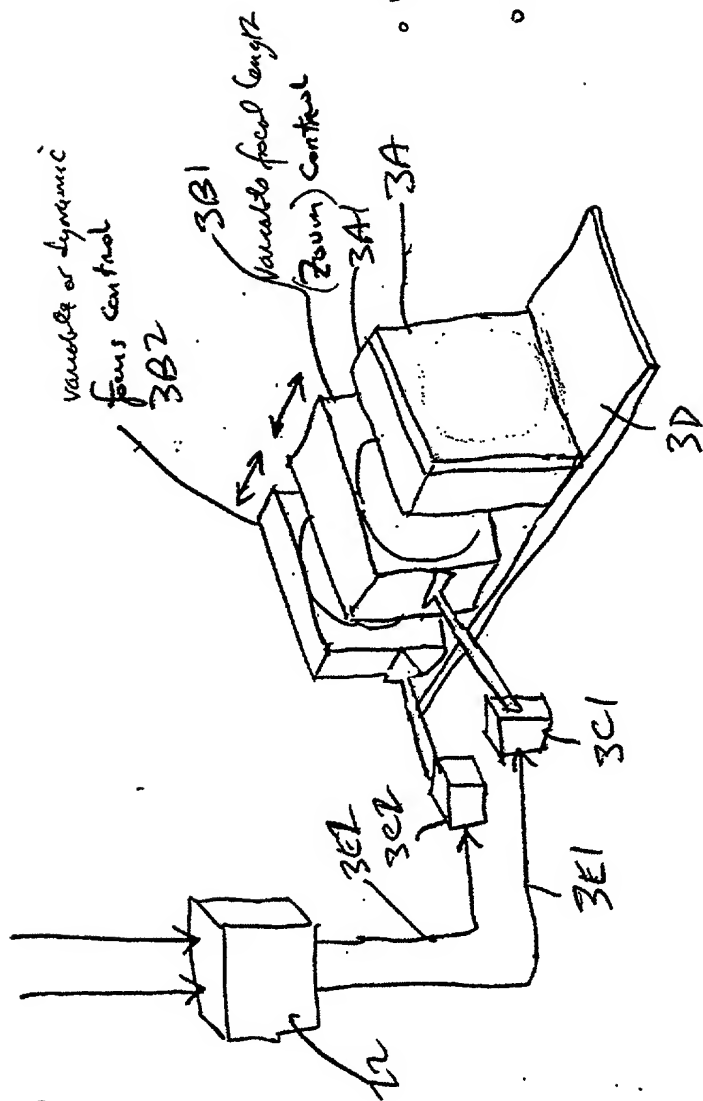
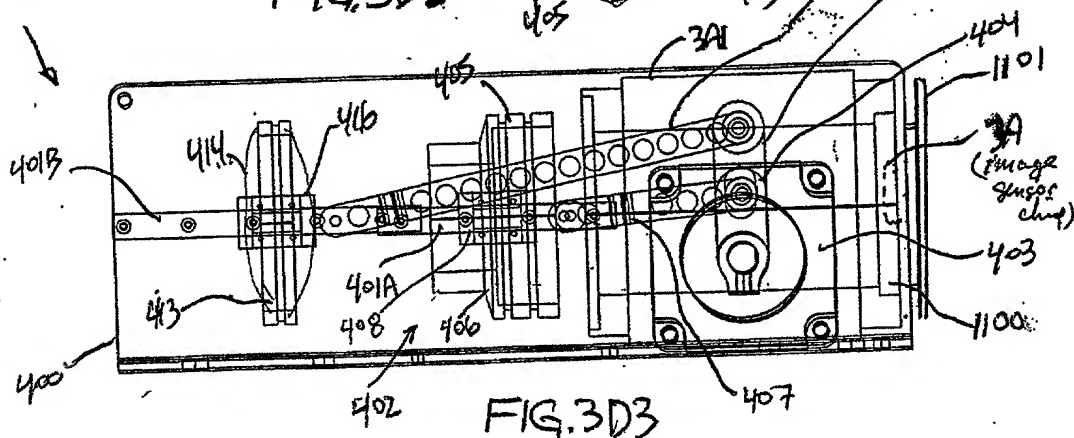
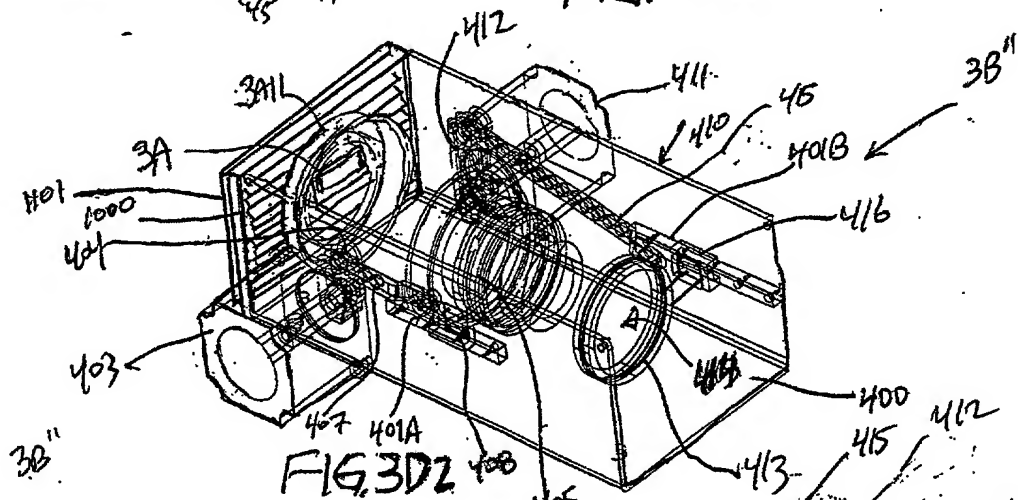
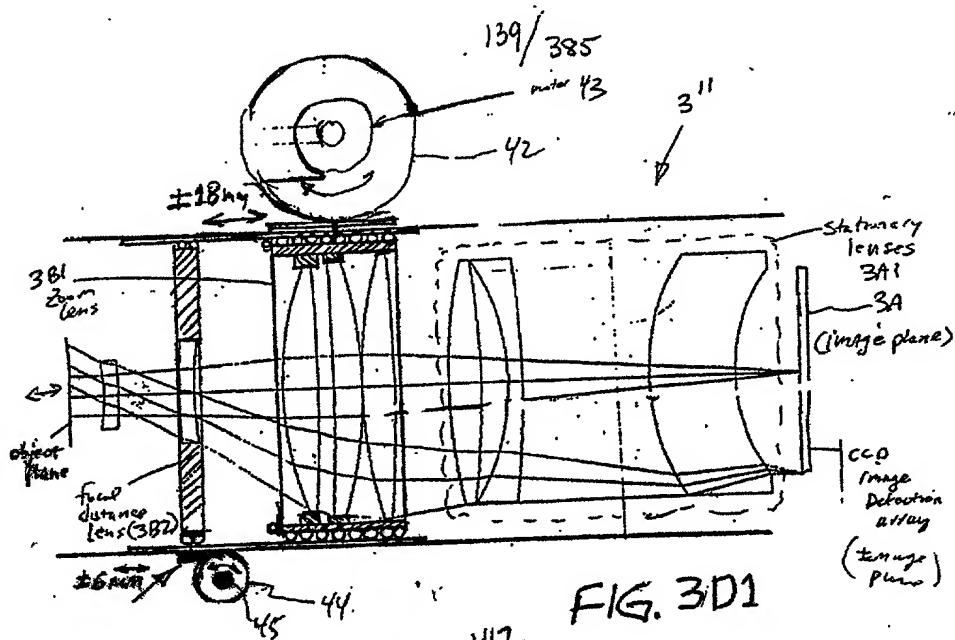


FIG. 3B2



- 138/385
- Variable focal length camera lens
- Variable focal distance

FIG. 3CZ



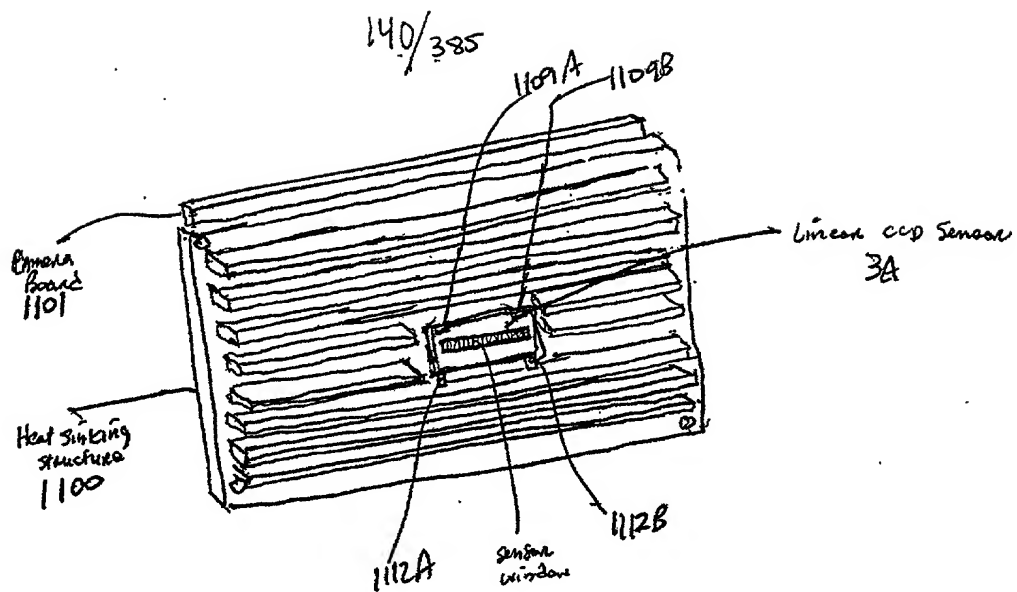


FIG. 3D4

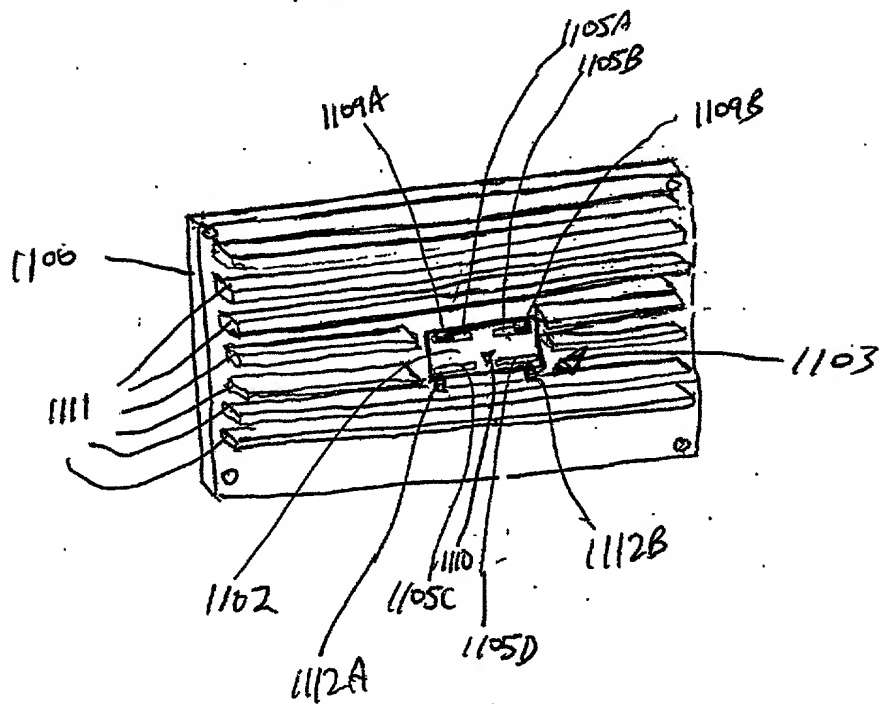


FIG. 3D5

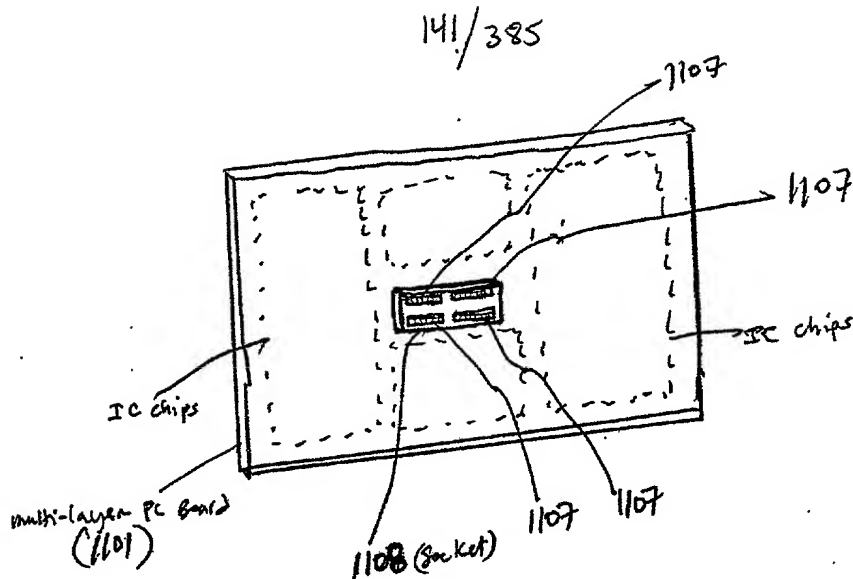


FIG. 3D6

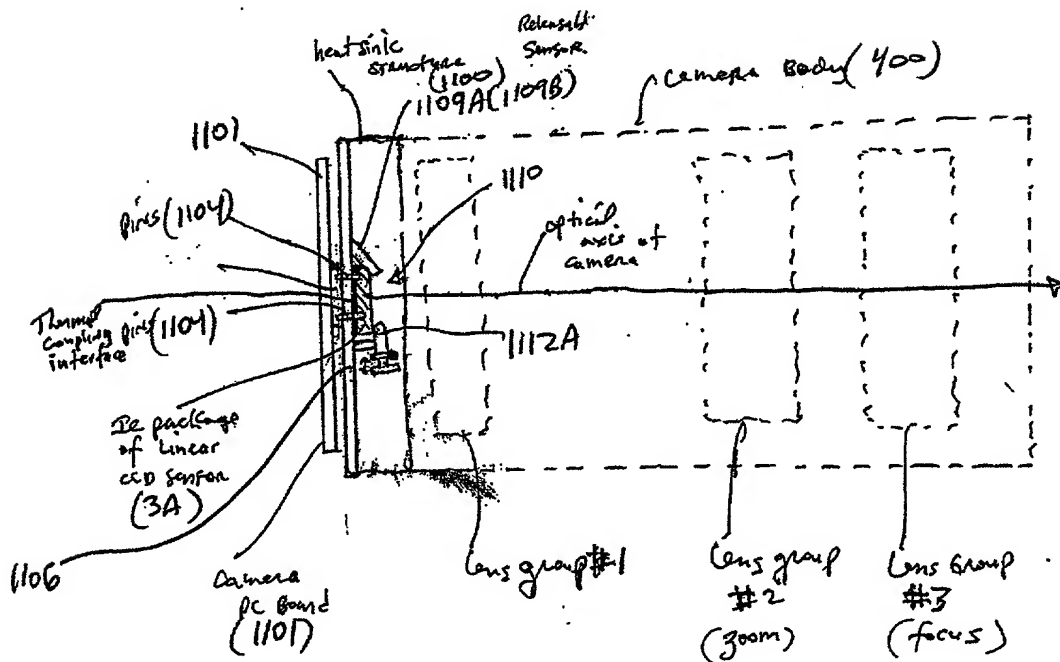
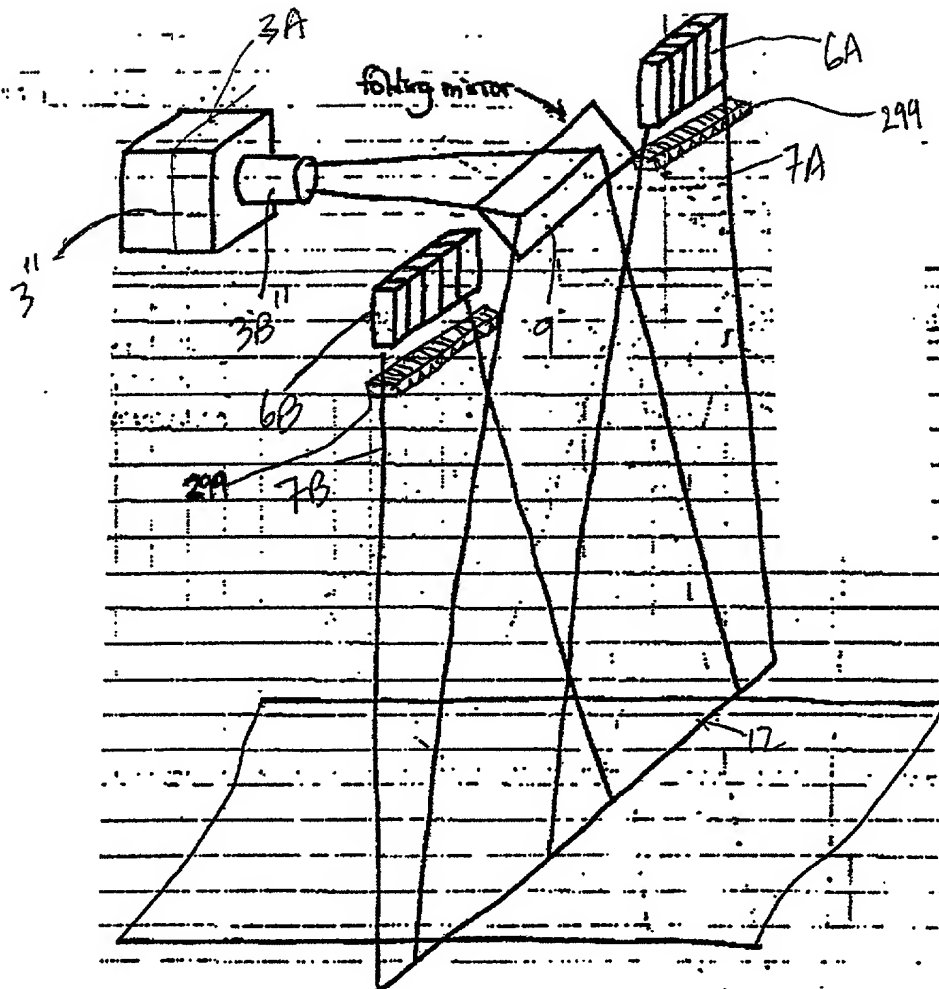


FIG. 3D7

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50B

FIG. 3E1

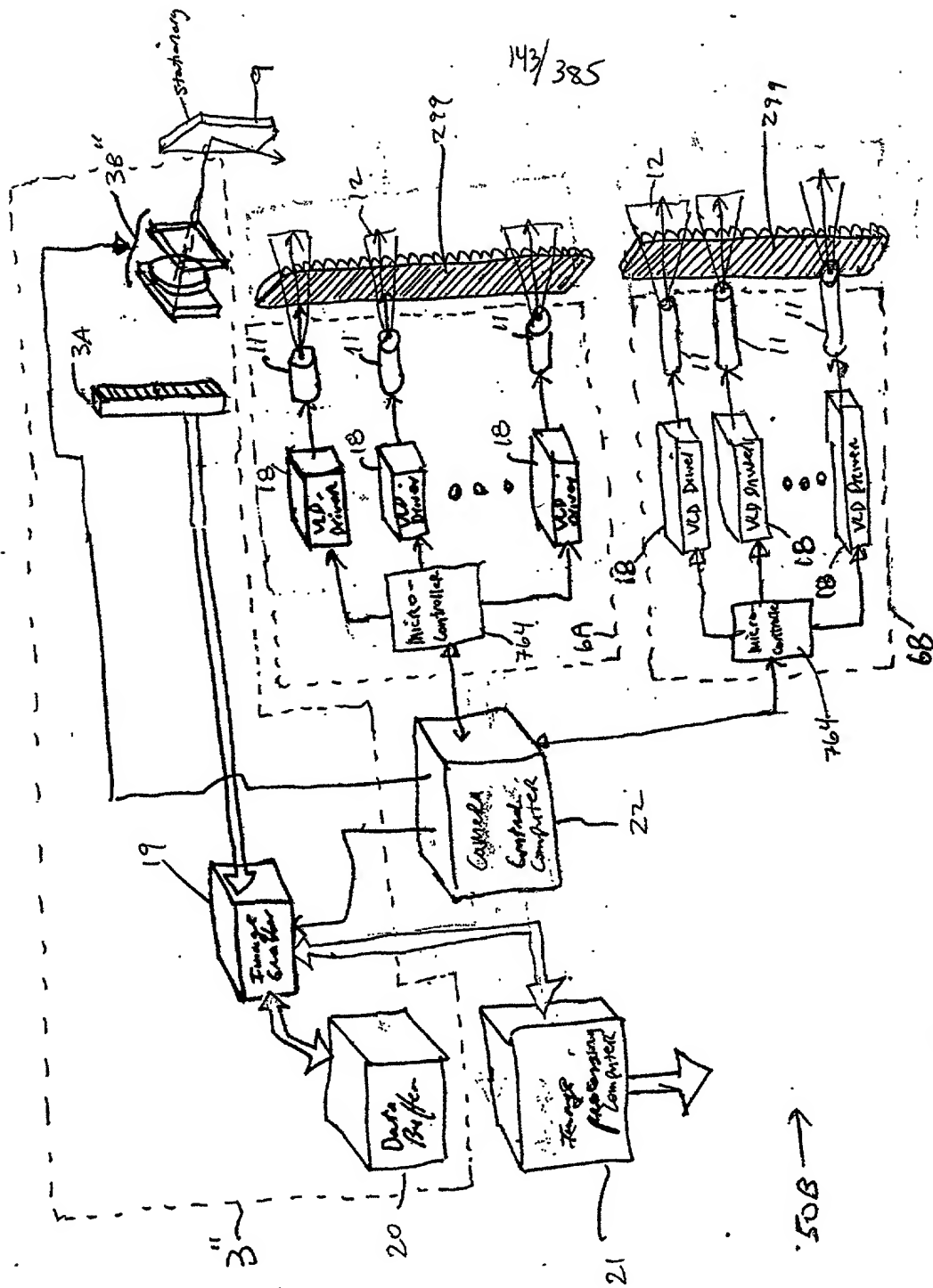


FIG. 3E2

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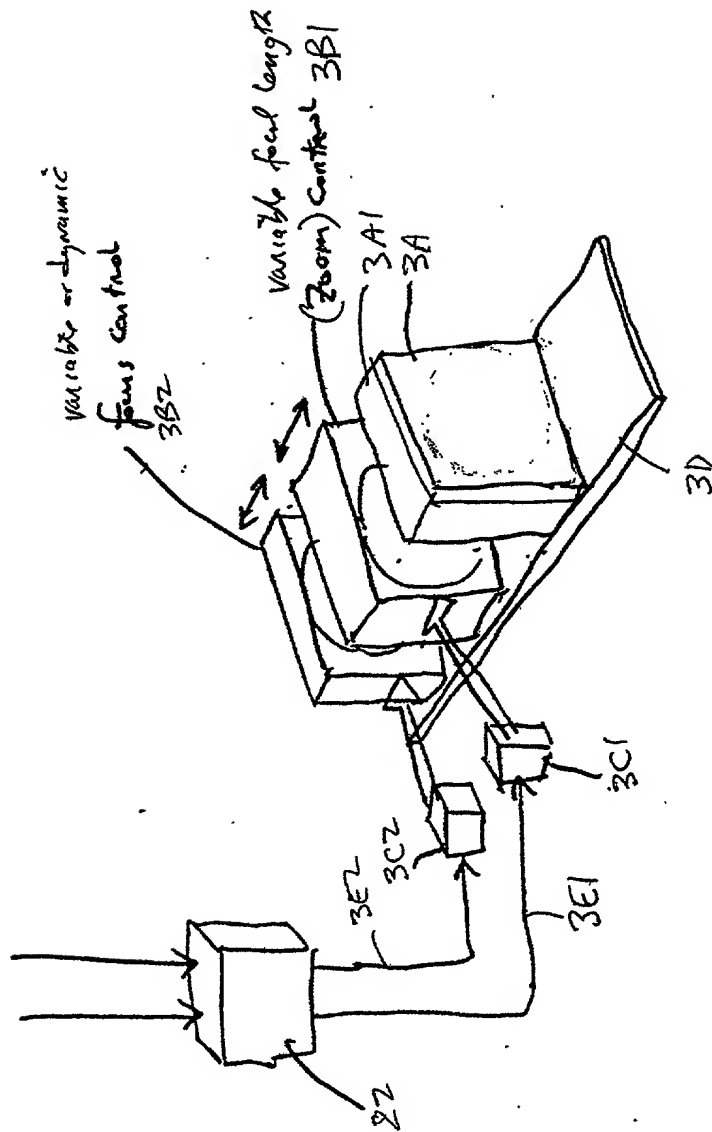
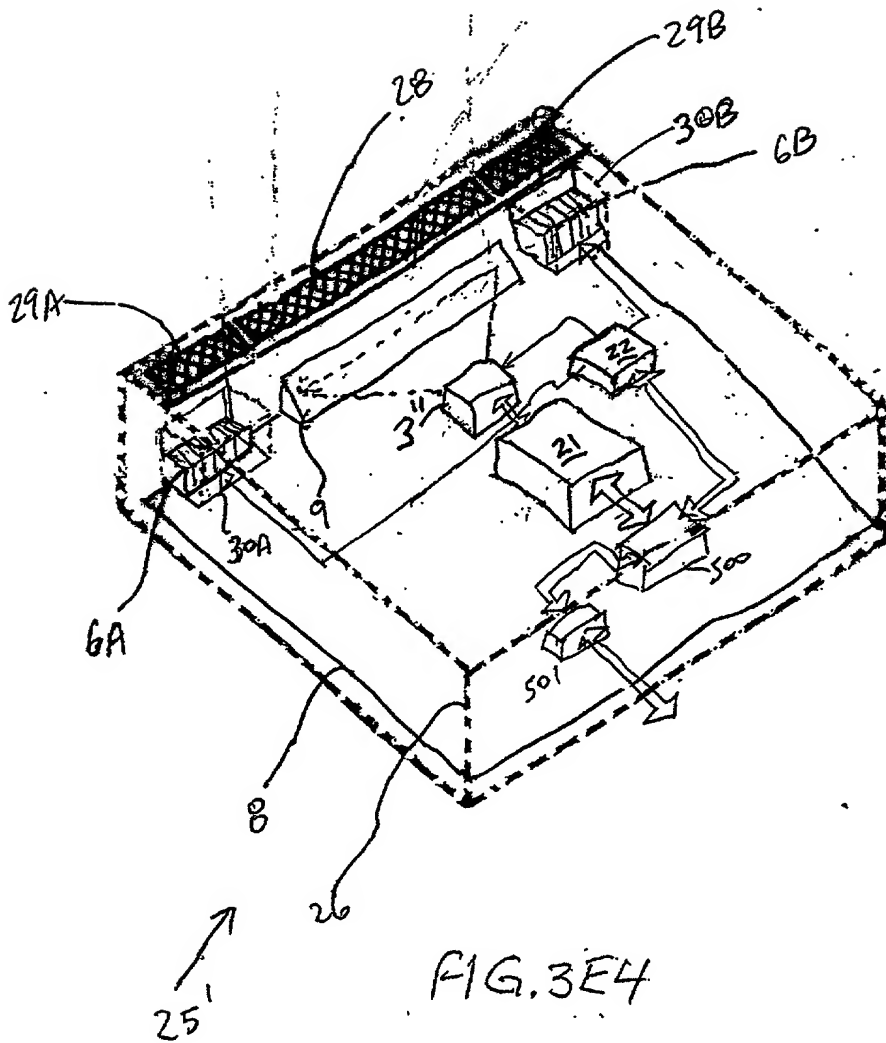


FIG. 3E3

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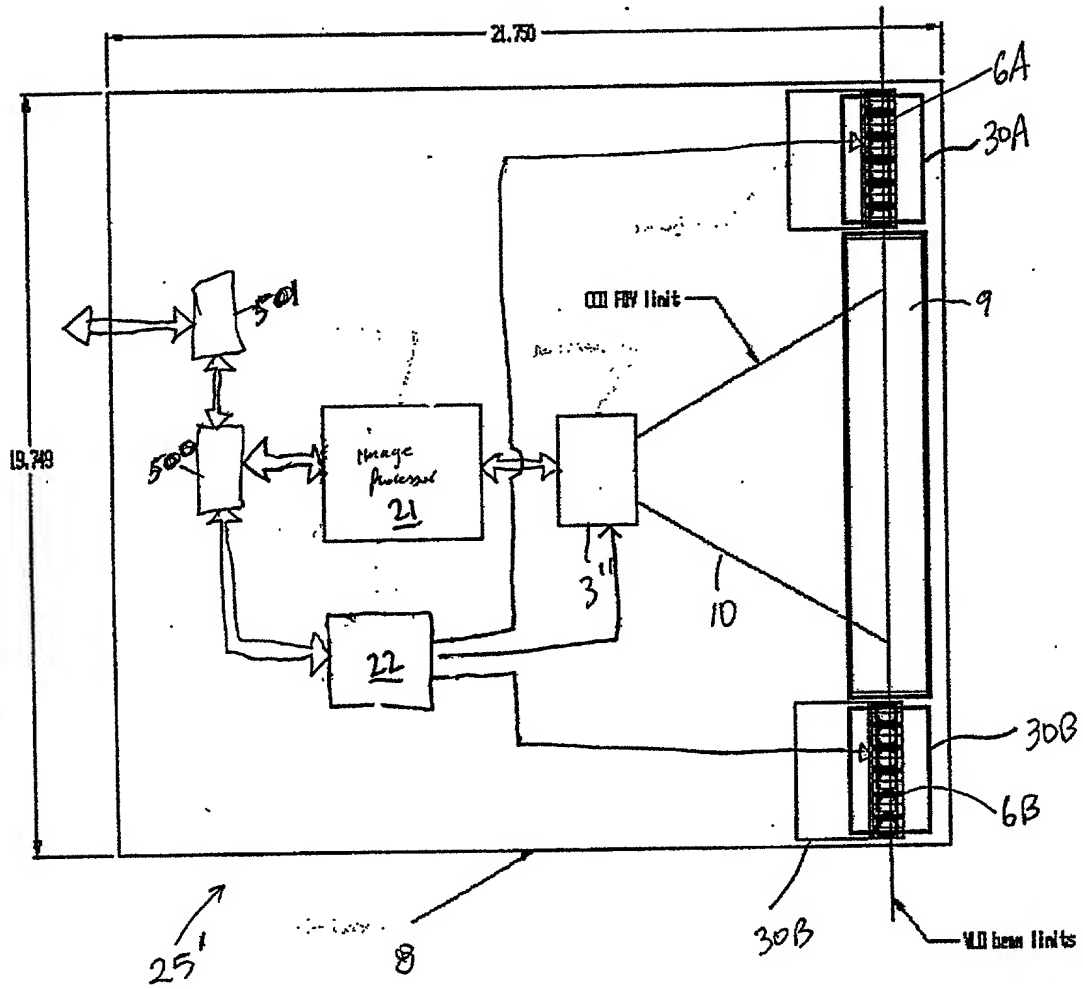


FIG. 3E5

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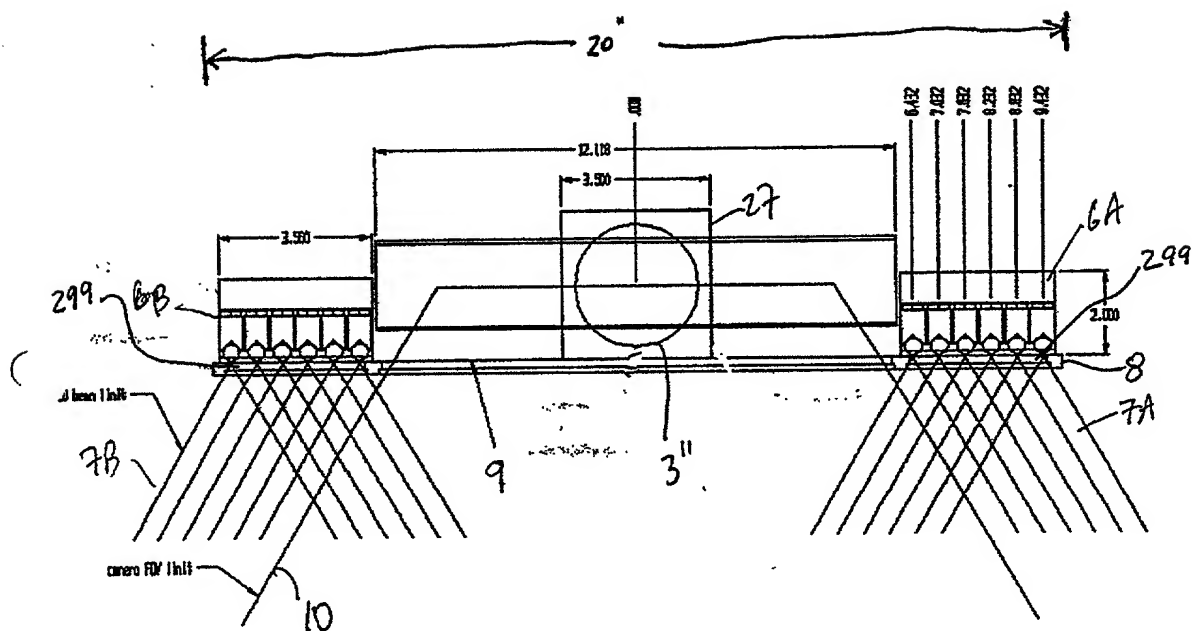


FIG. 3E6

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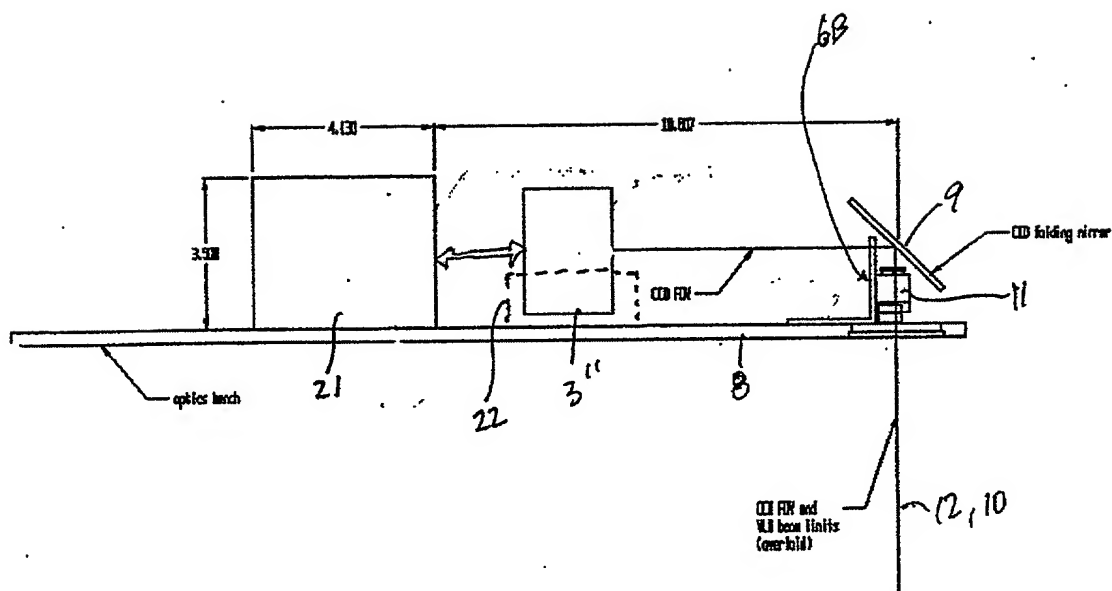


FIG. 3E7

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*Variable FOV

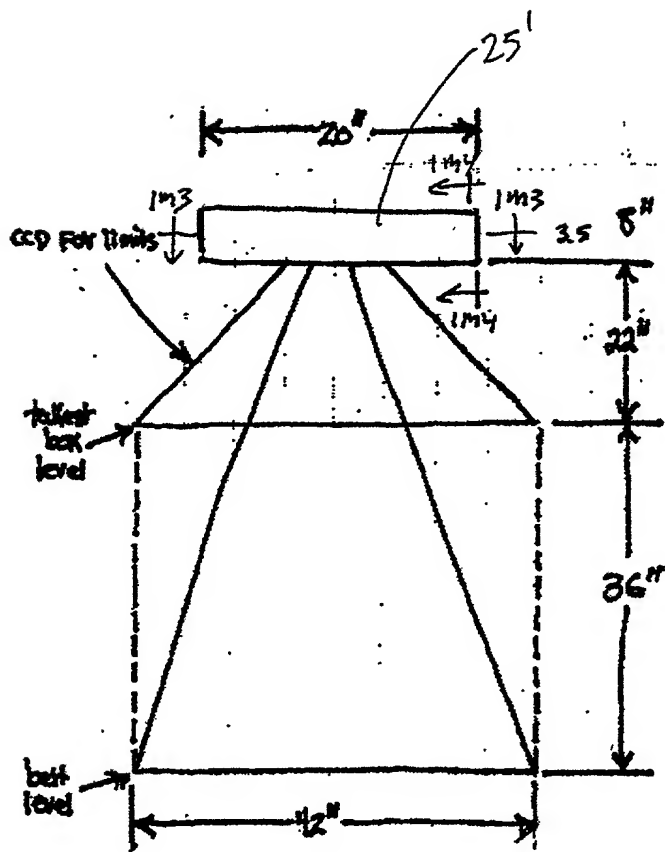


FIG. 3E8

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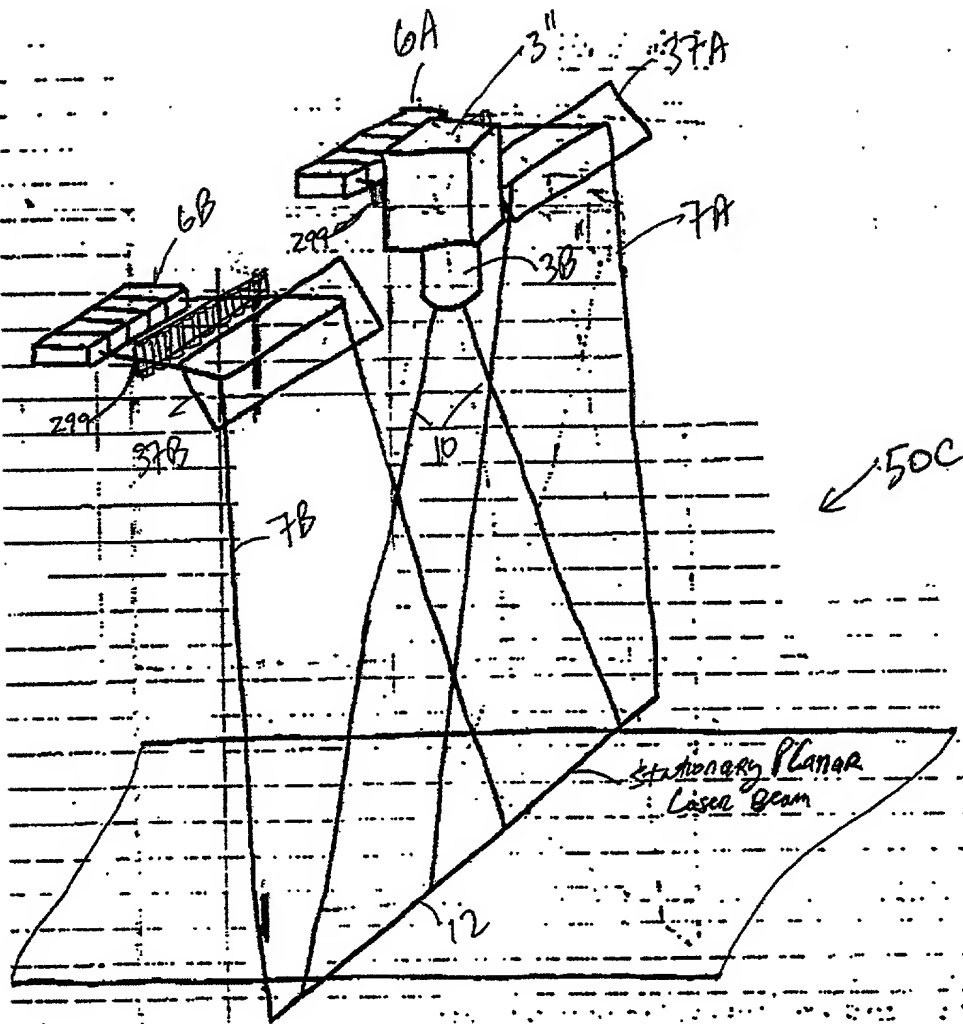


FIG. 3F1

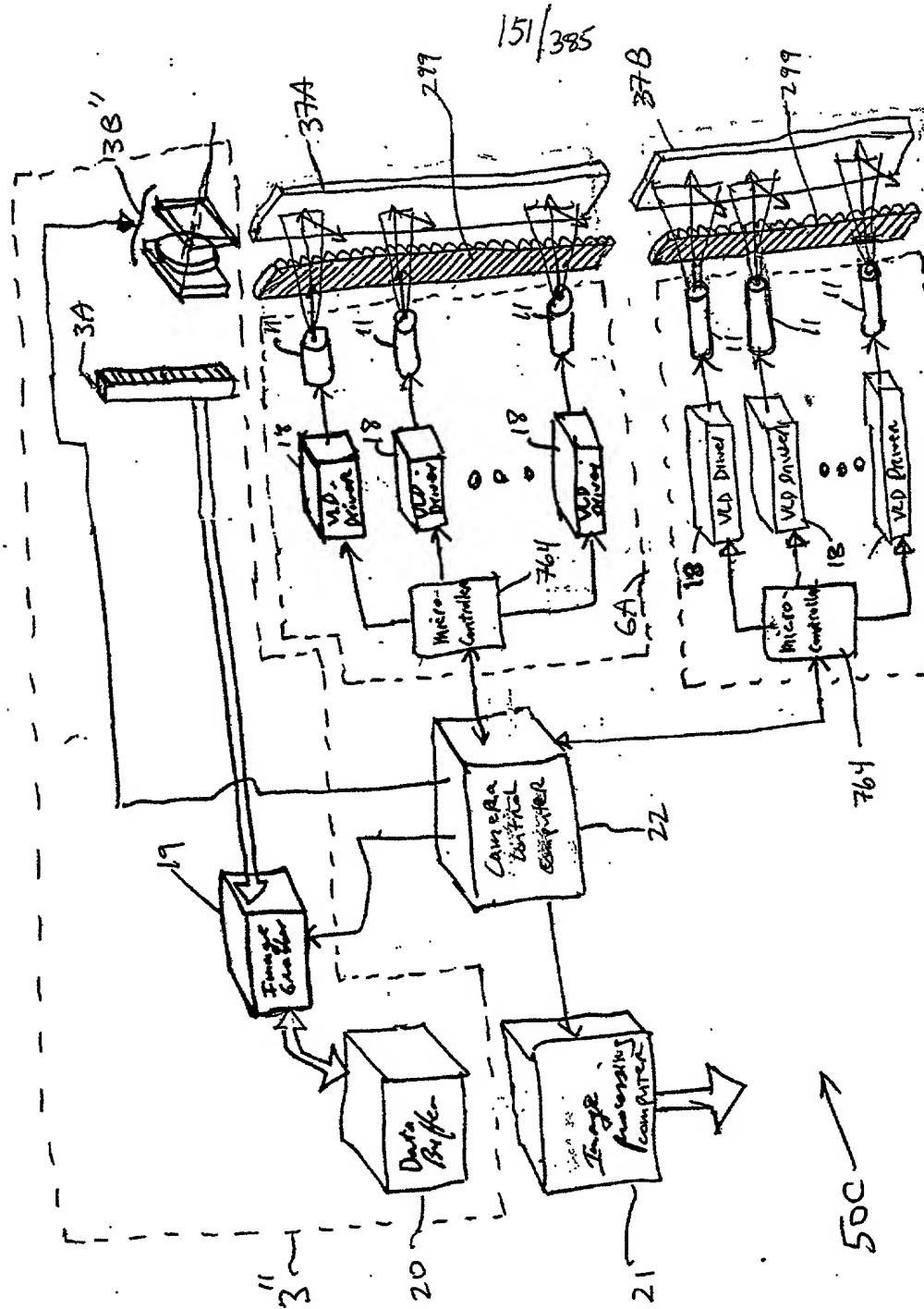
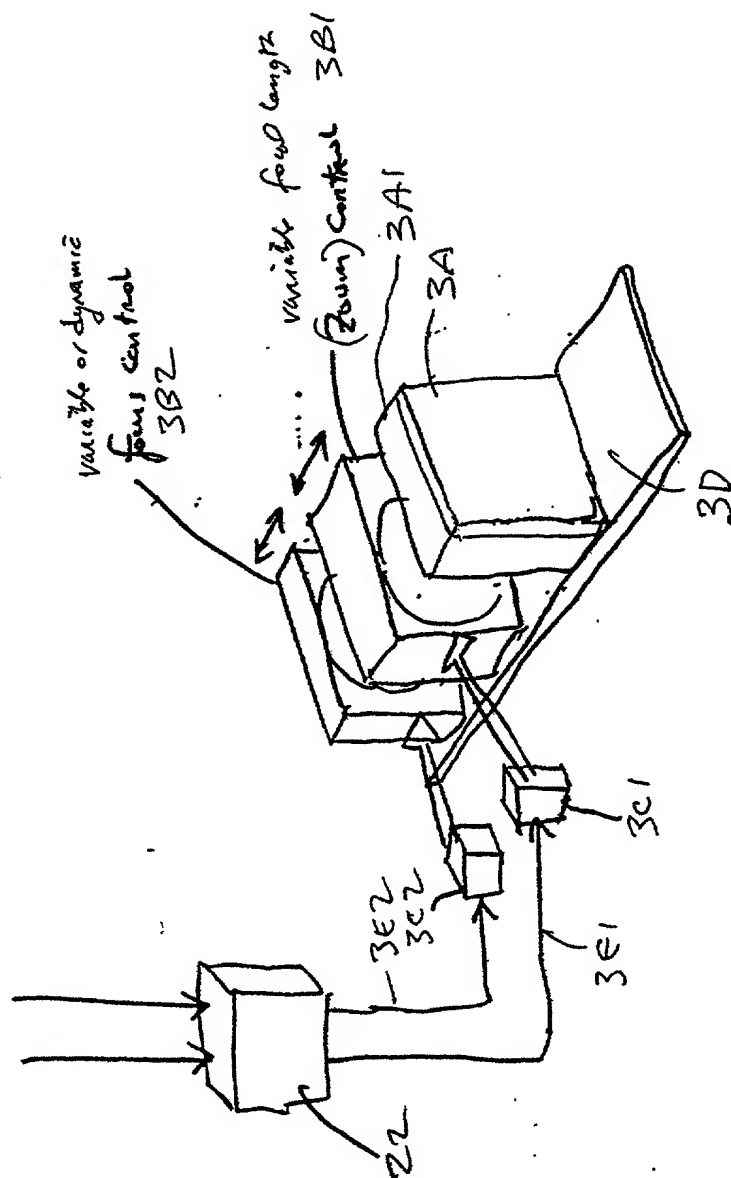


FIG. 3F2

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3

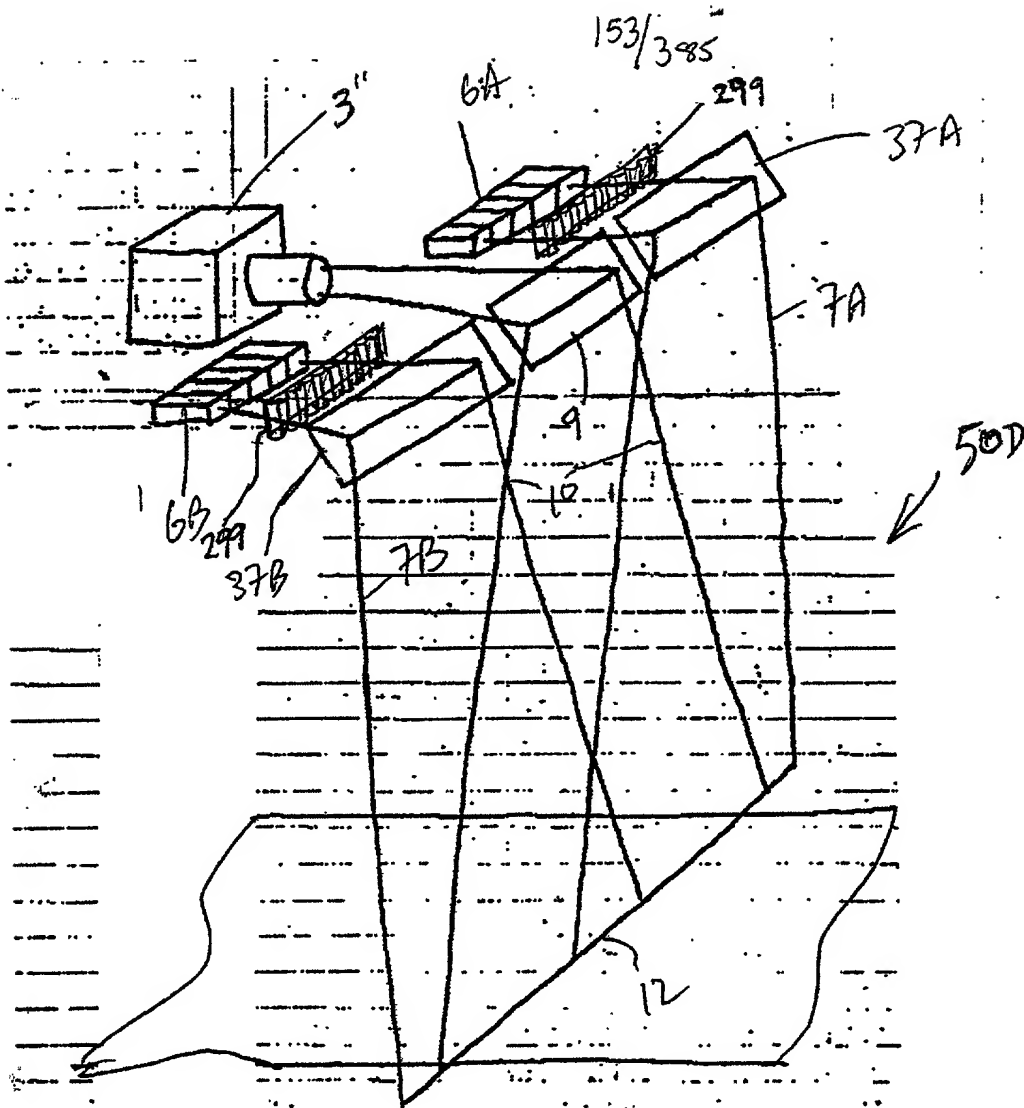
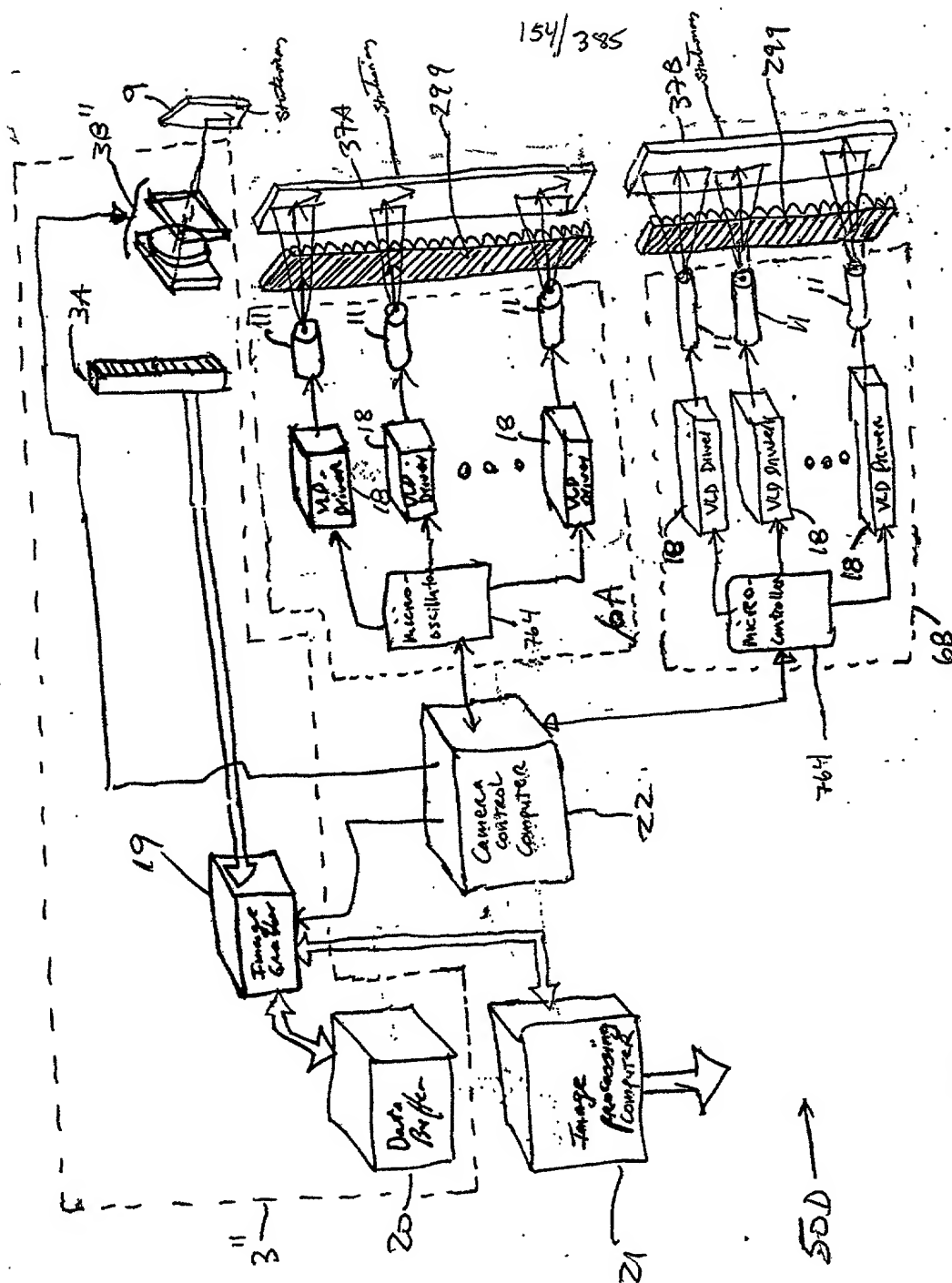


FIG. 3G1


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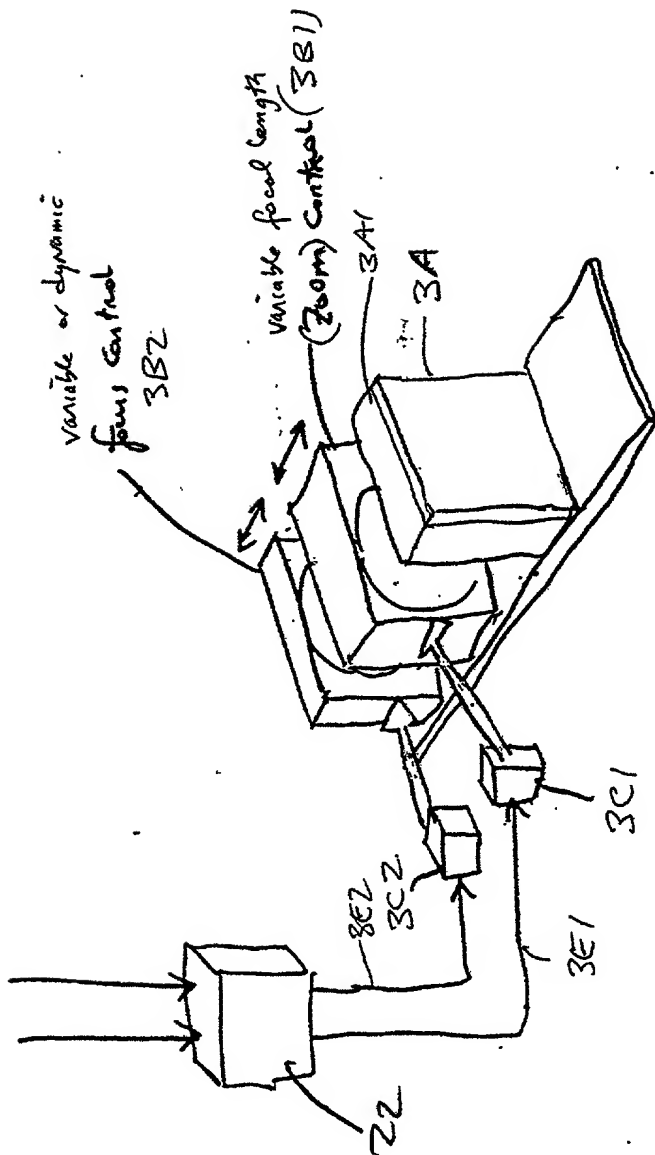


FIG. 393

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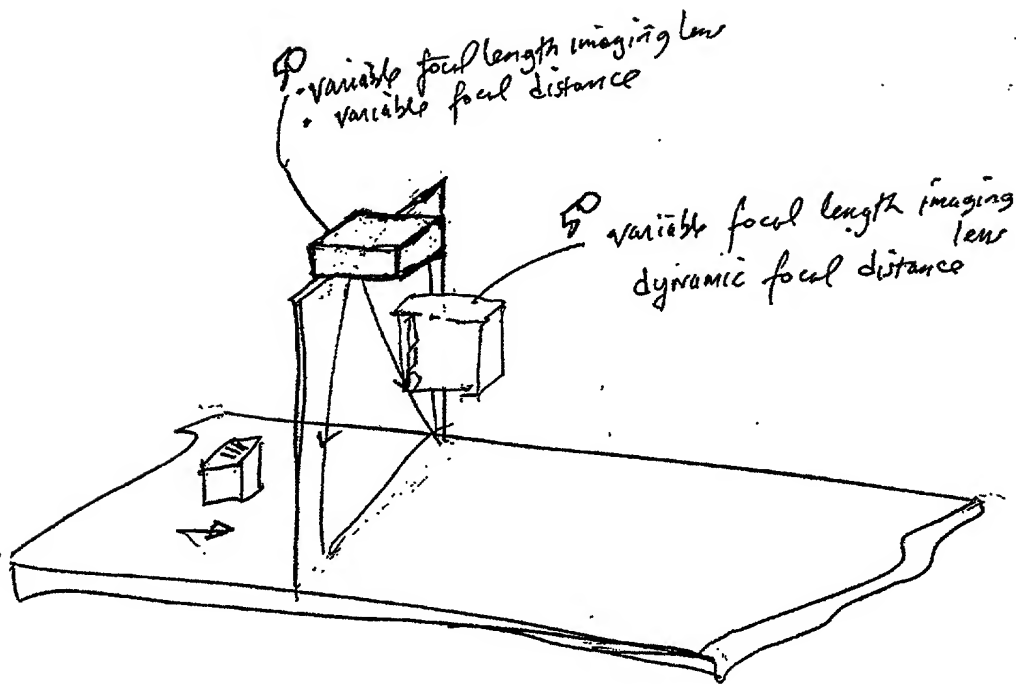


FIG. 3H

20500-SEEK-001

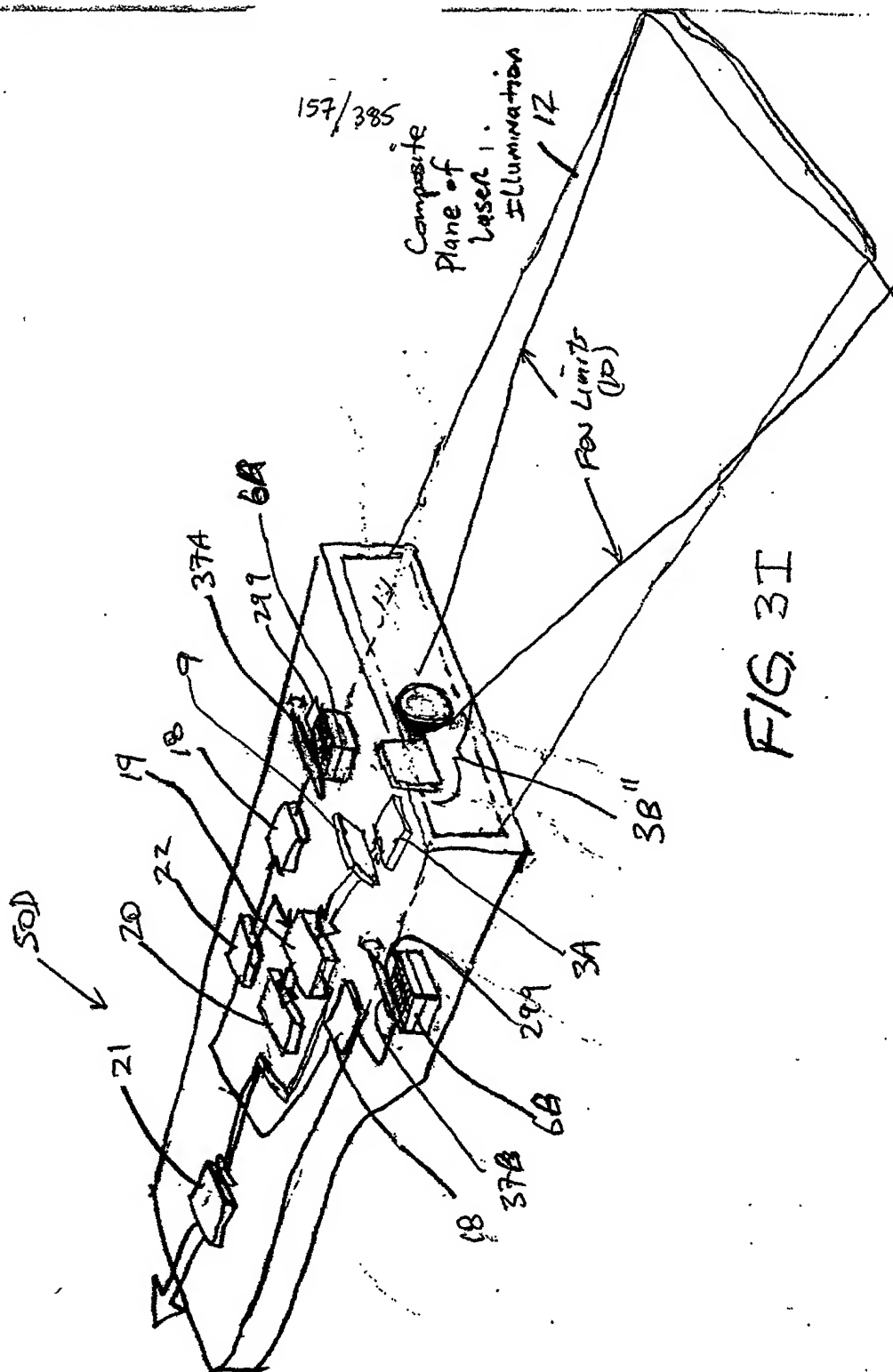


FIG. 3I

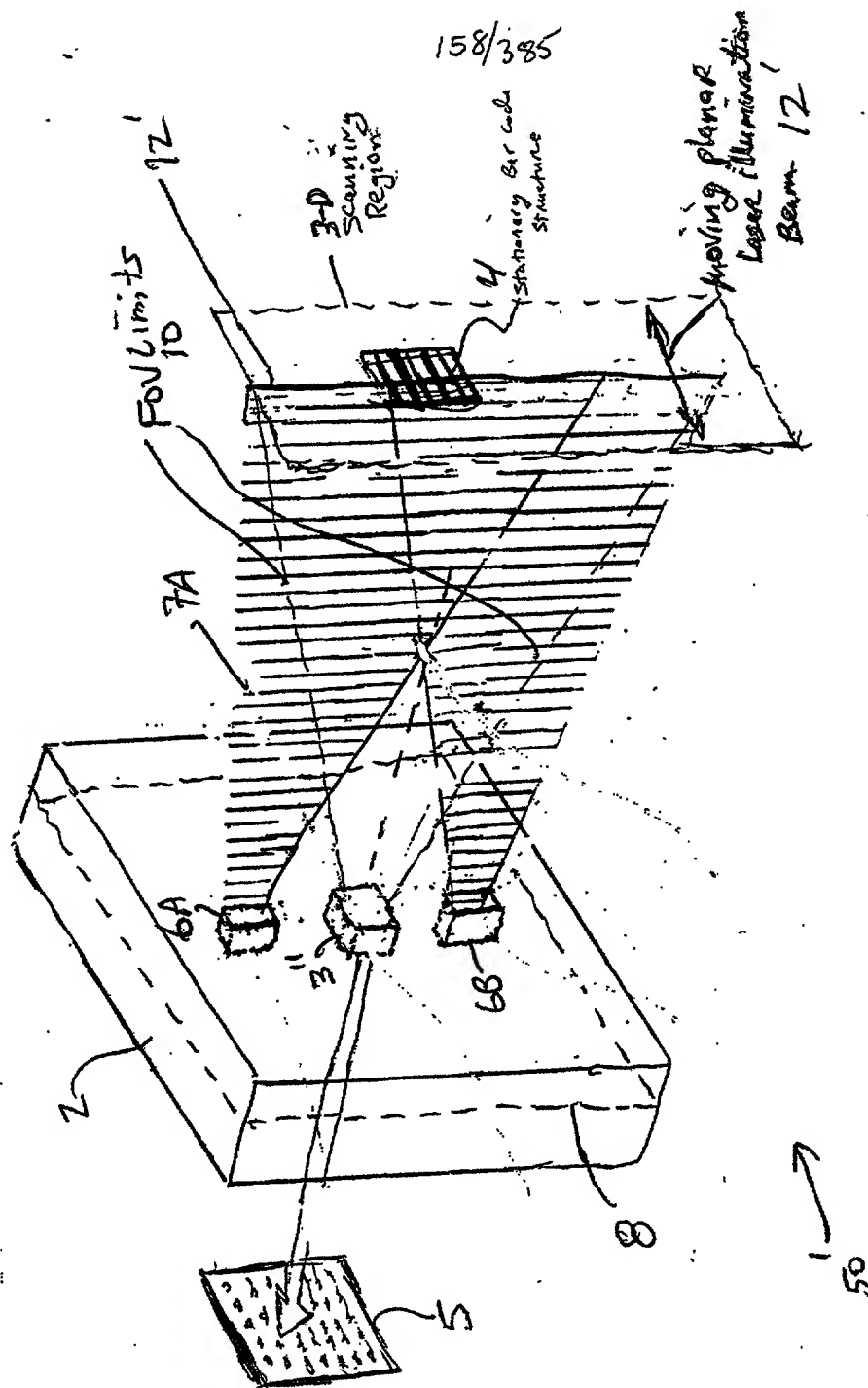


FIG. 3J1

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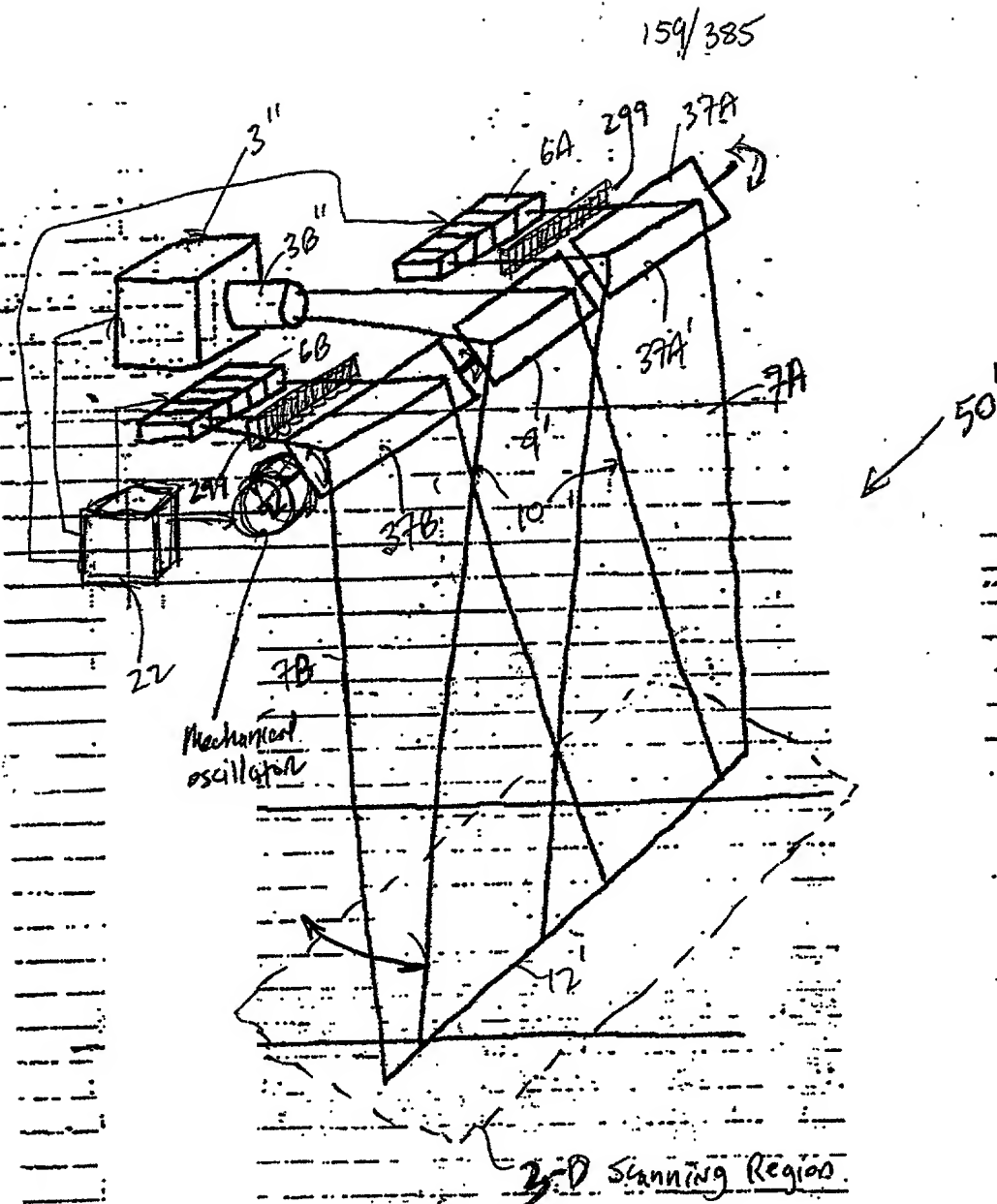


FIG 3J2

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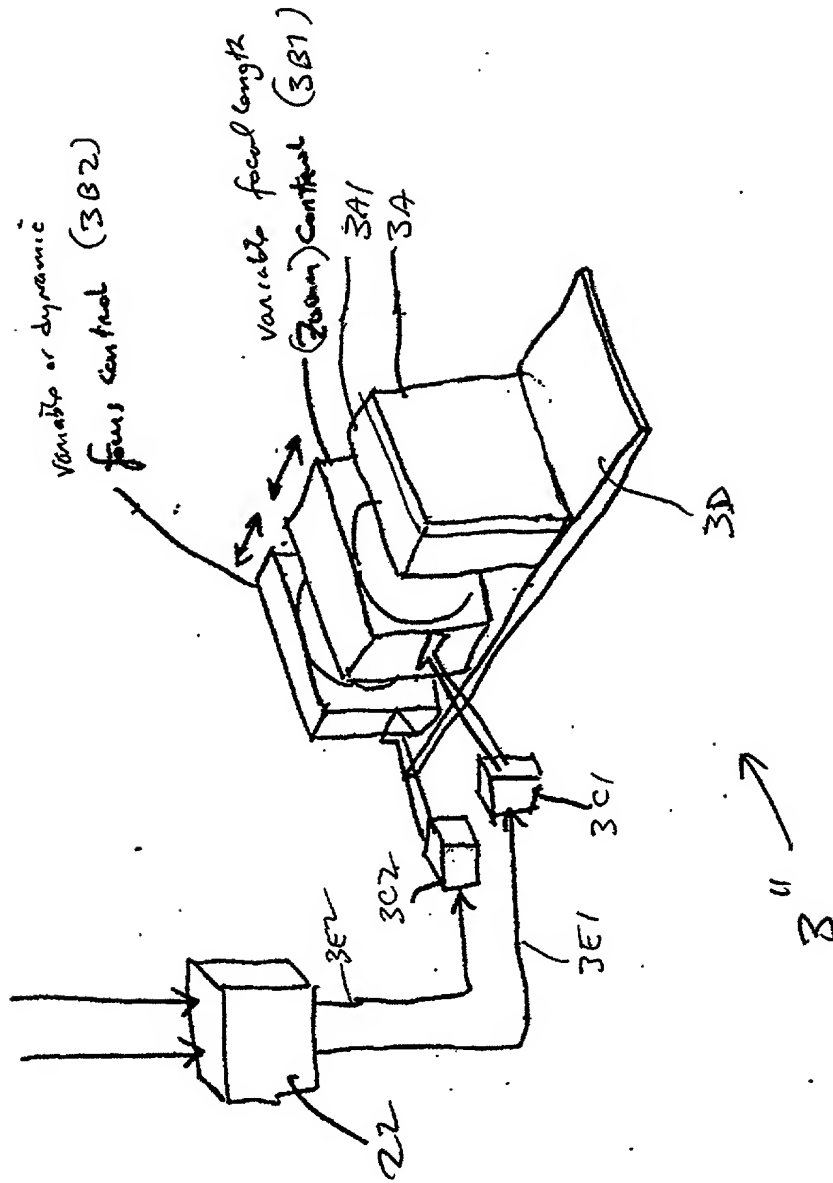


FIG. 354

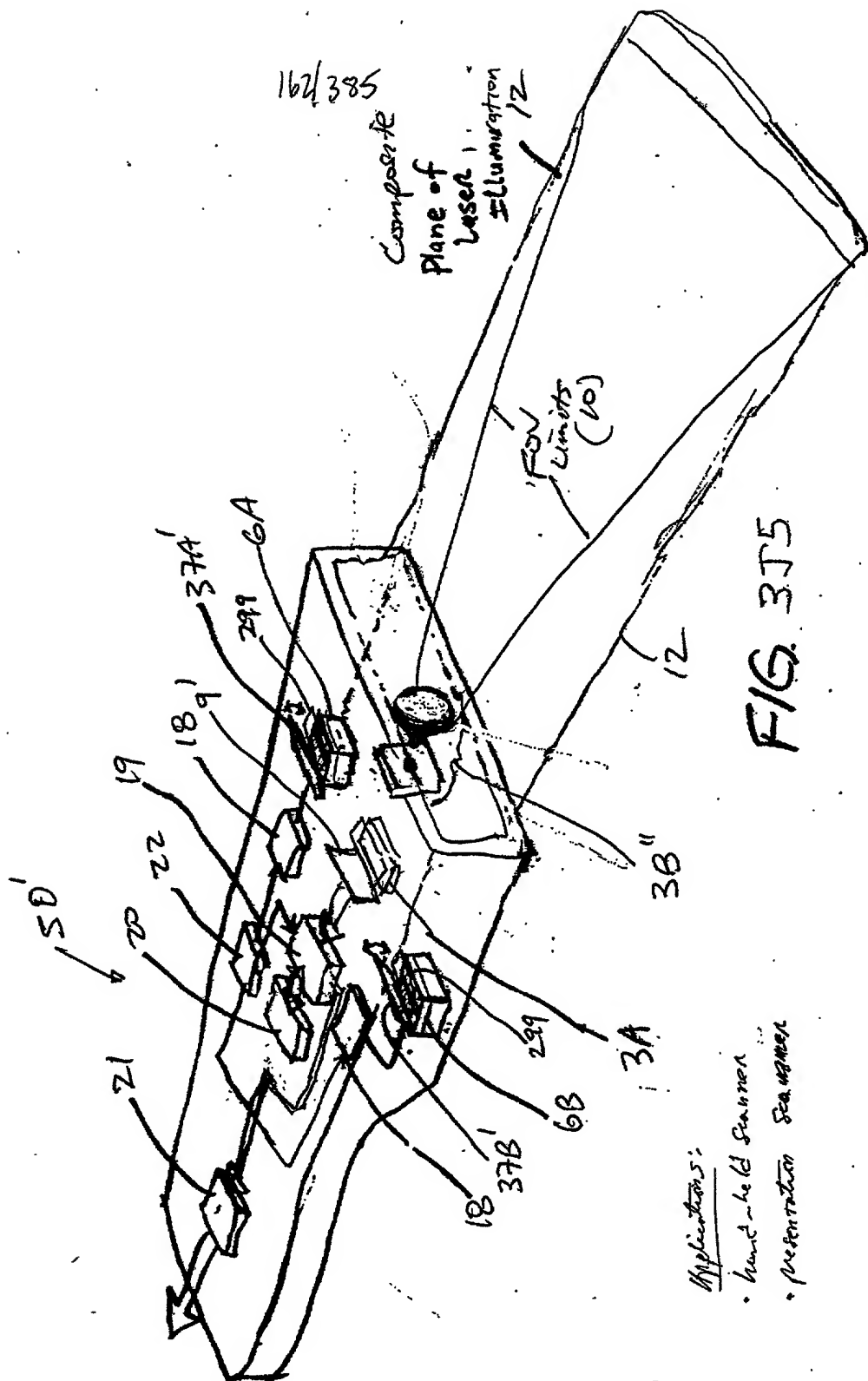
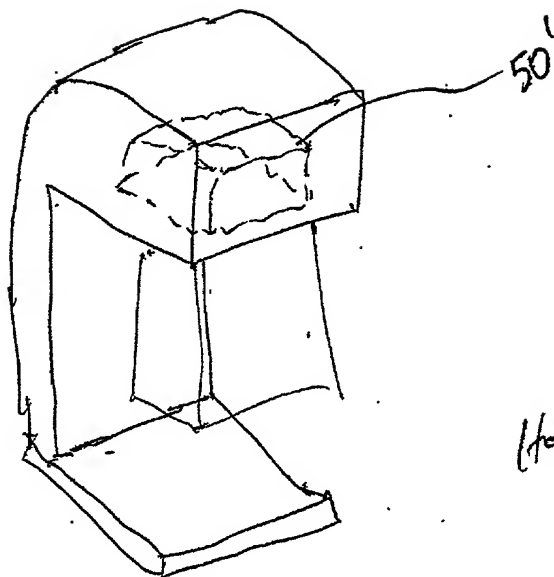


FIG. 3T5

- Applications:
- Hand-held Scanner
 - Presentation Scanner

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2-D
Hold-under
Scanner

FIG-316

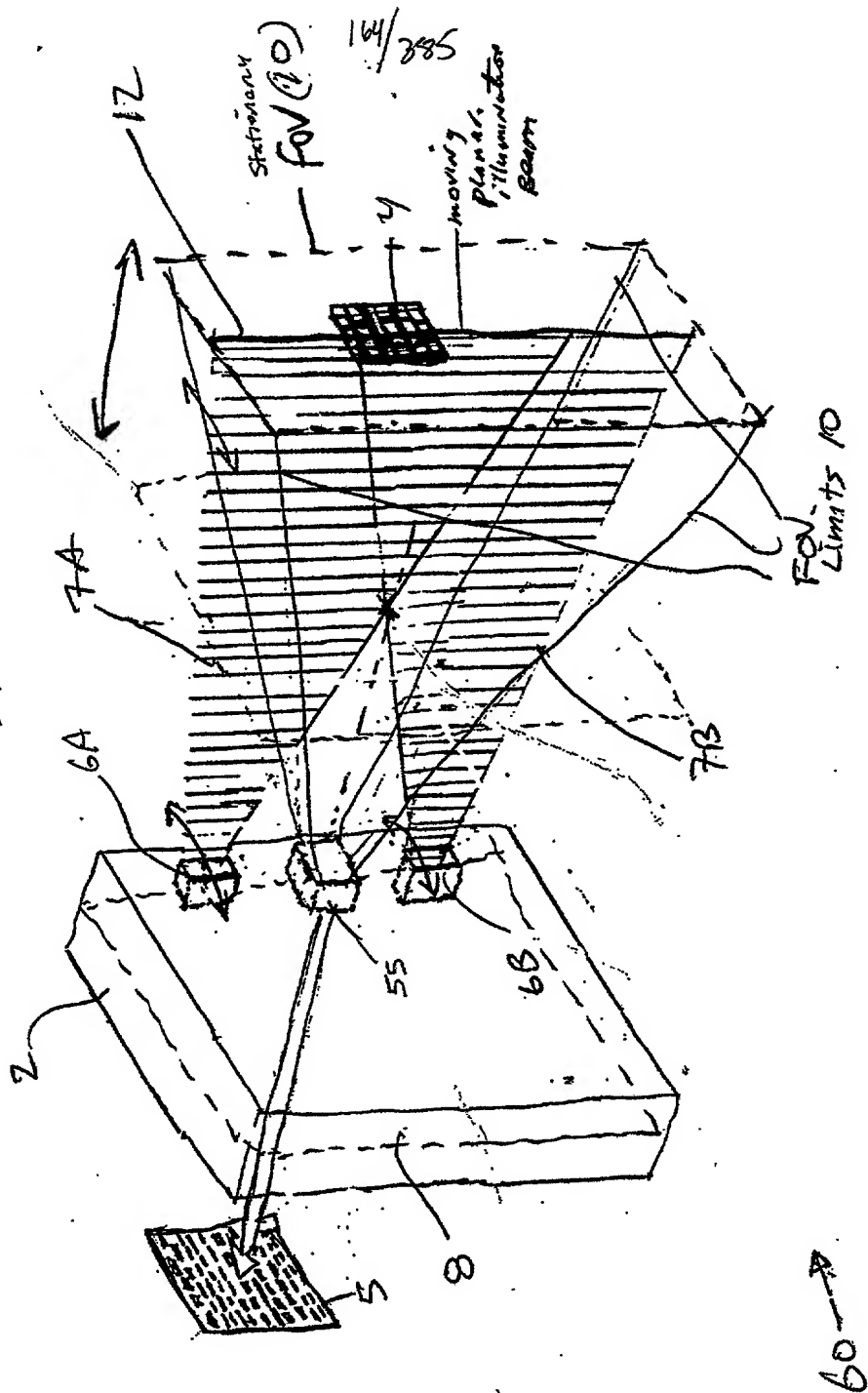


FIG 4A

1165/385

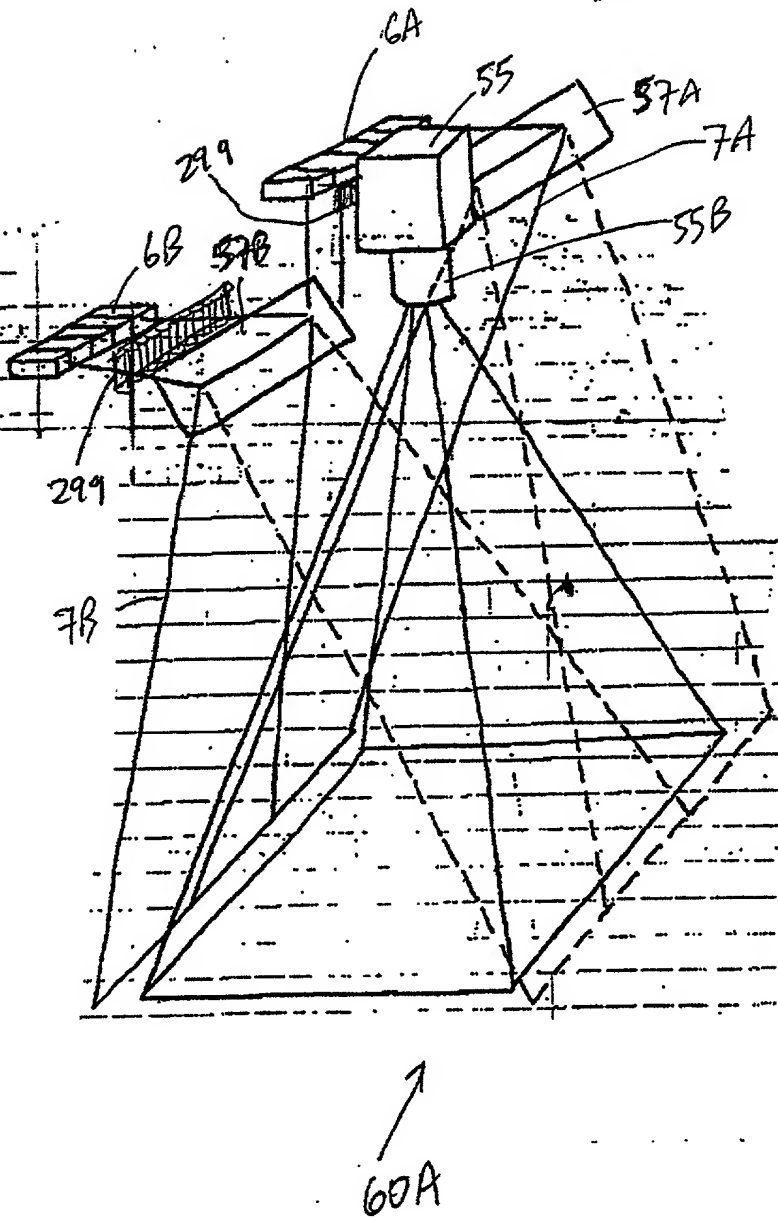


FIG. 4B1

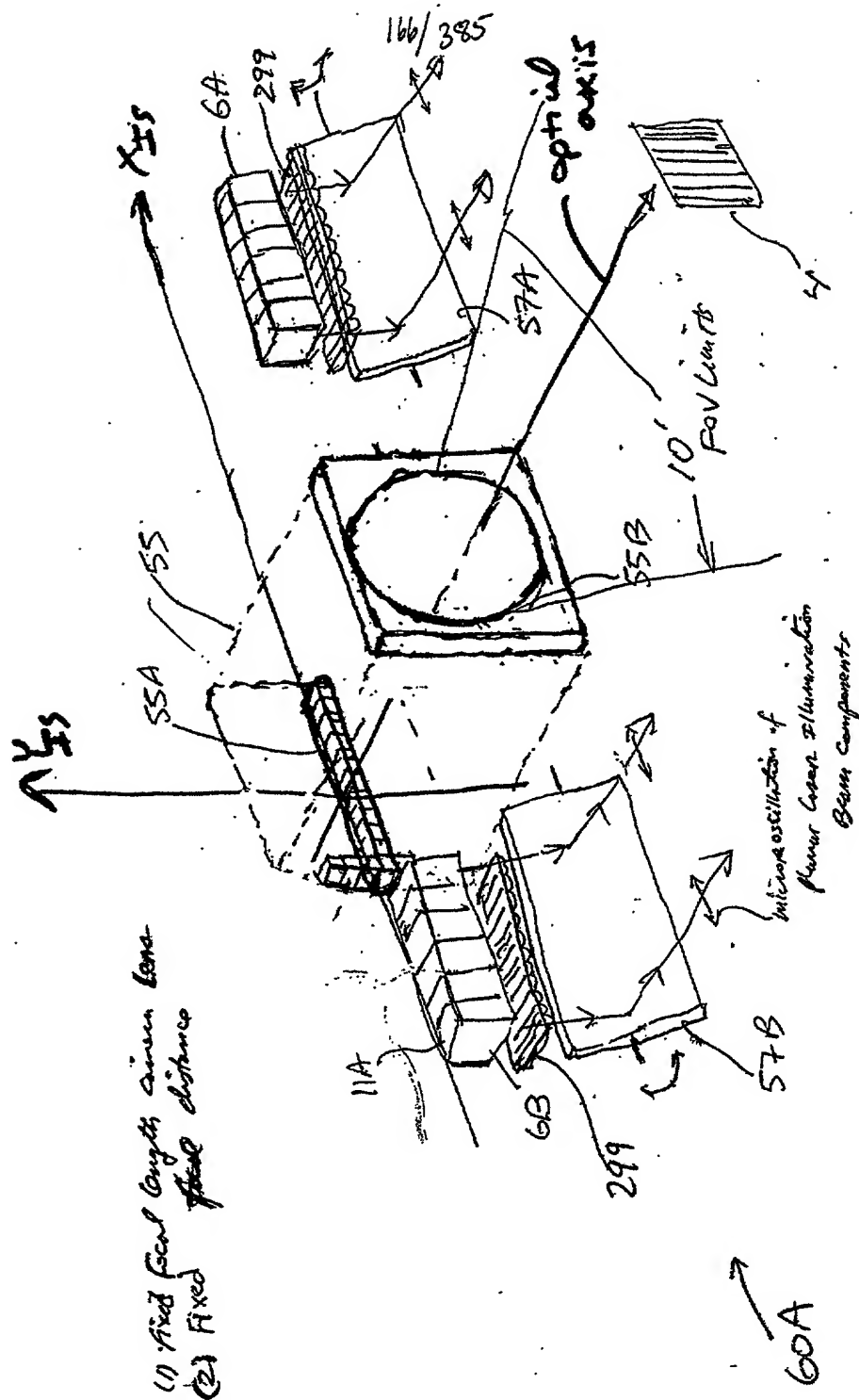


FIG. 4B.Z

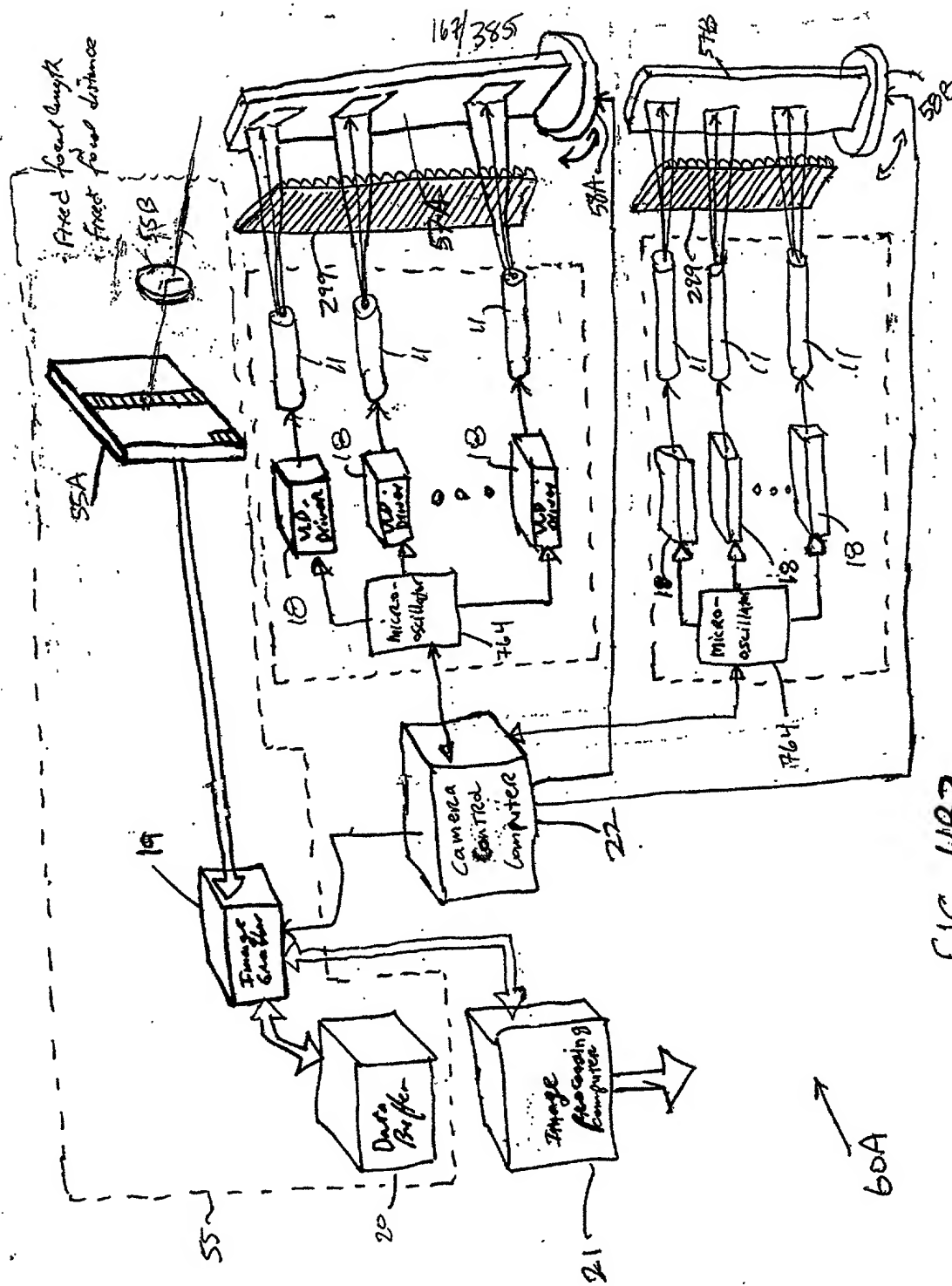


FIG. 4B3

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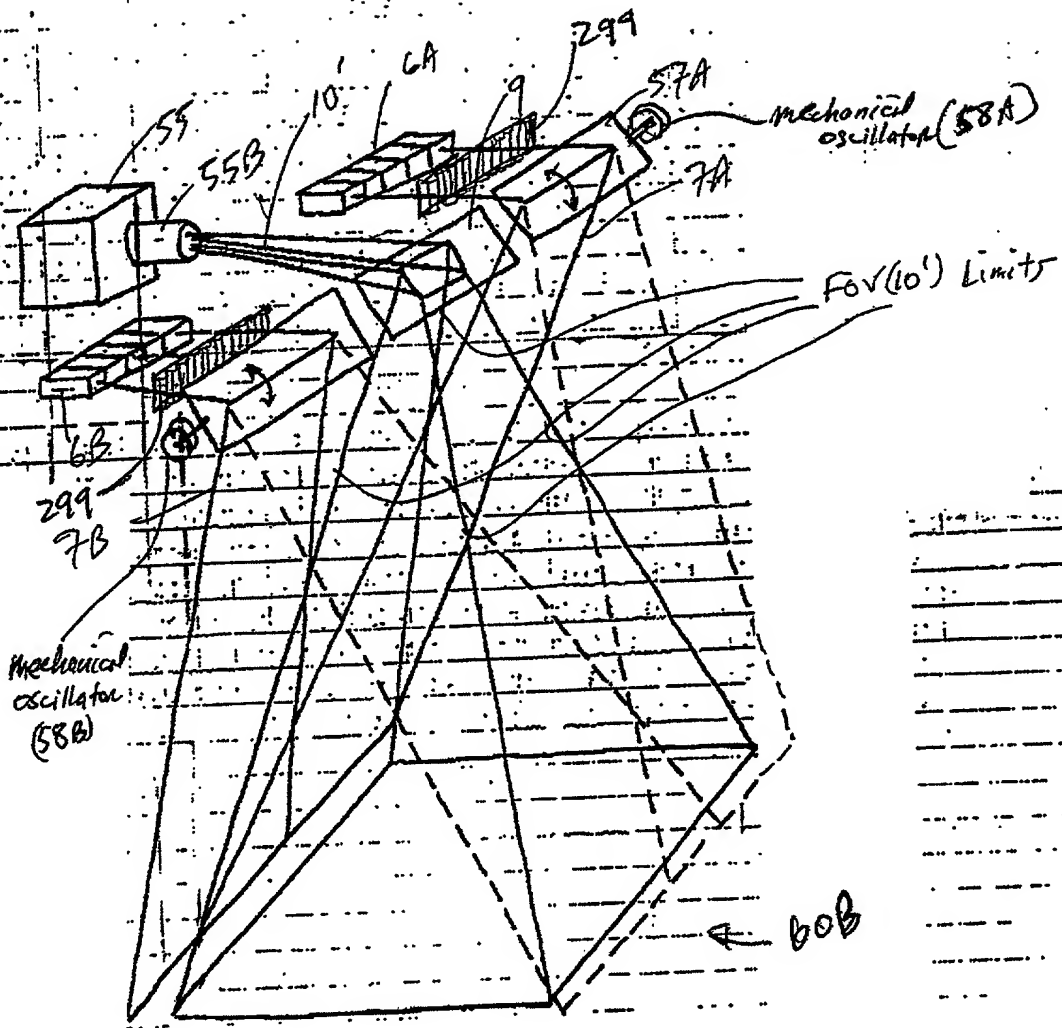


FIG. 4C1

FIG. 4C2

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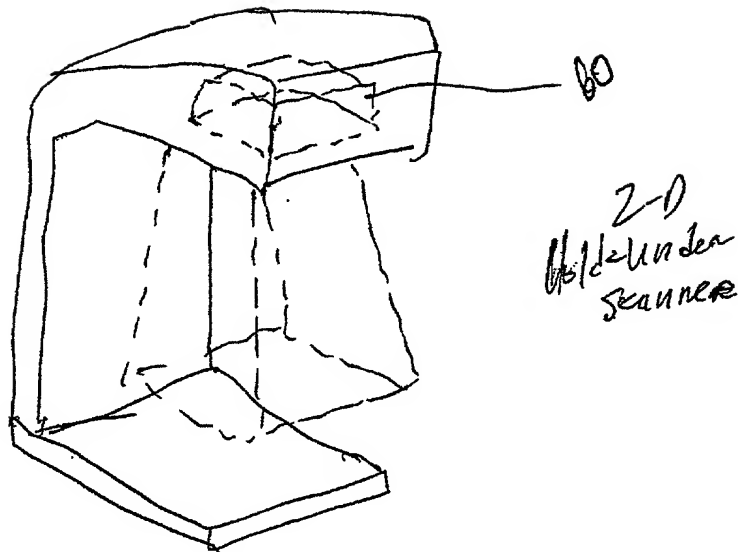


FIG. 4D

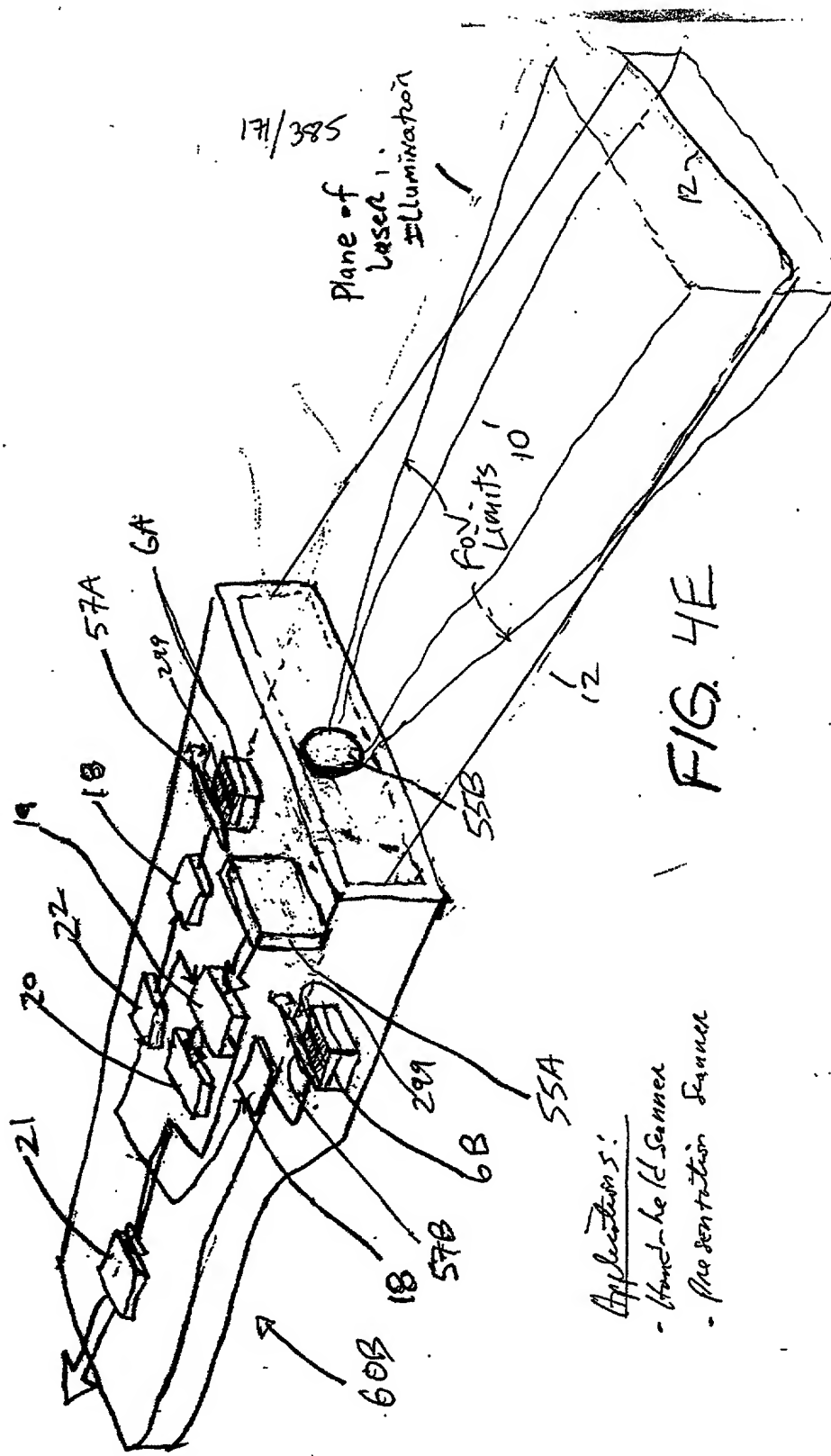
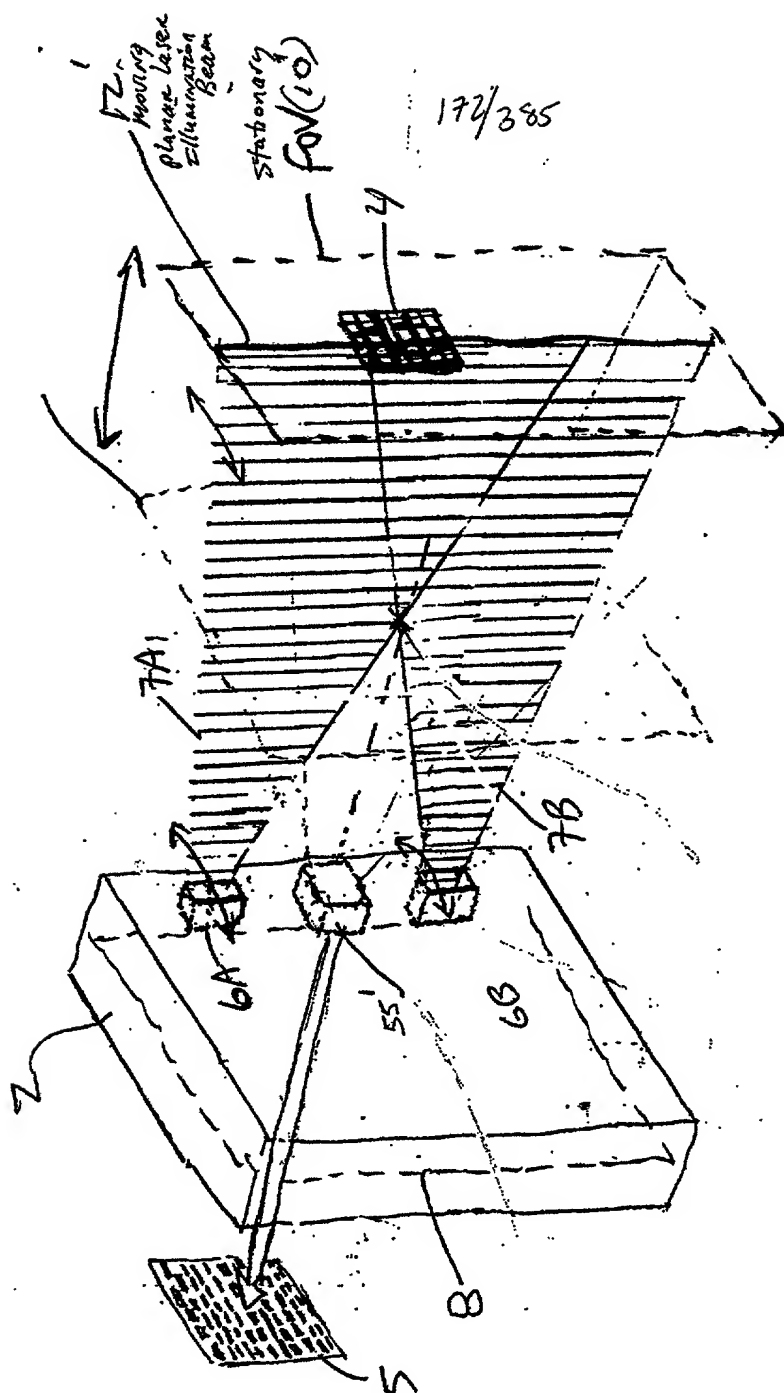


FIG. 4E

Applications:
 - Hand-held Scanner
 - Presentation Scanner



AG 5A

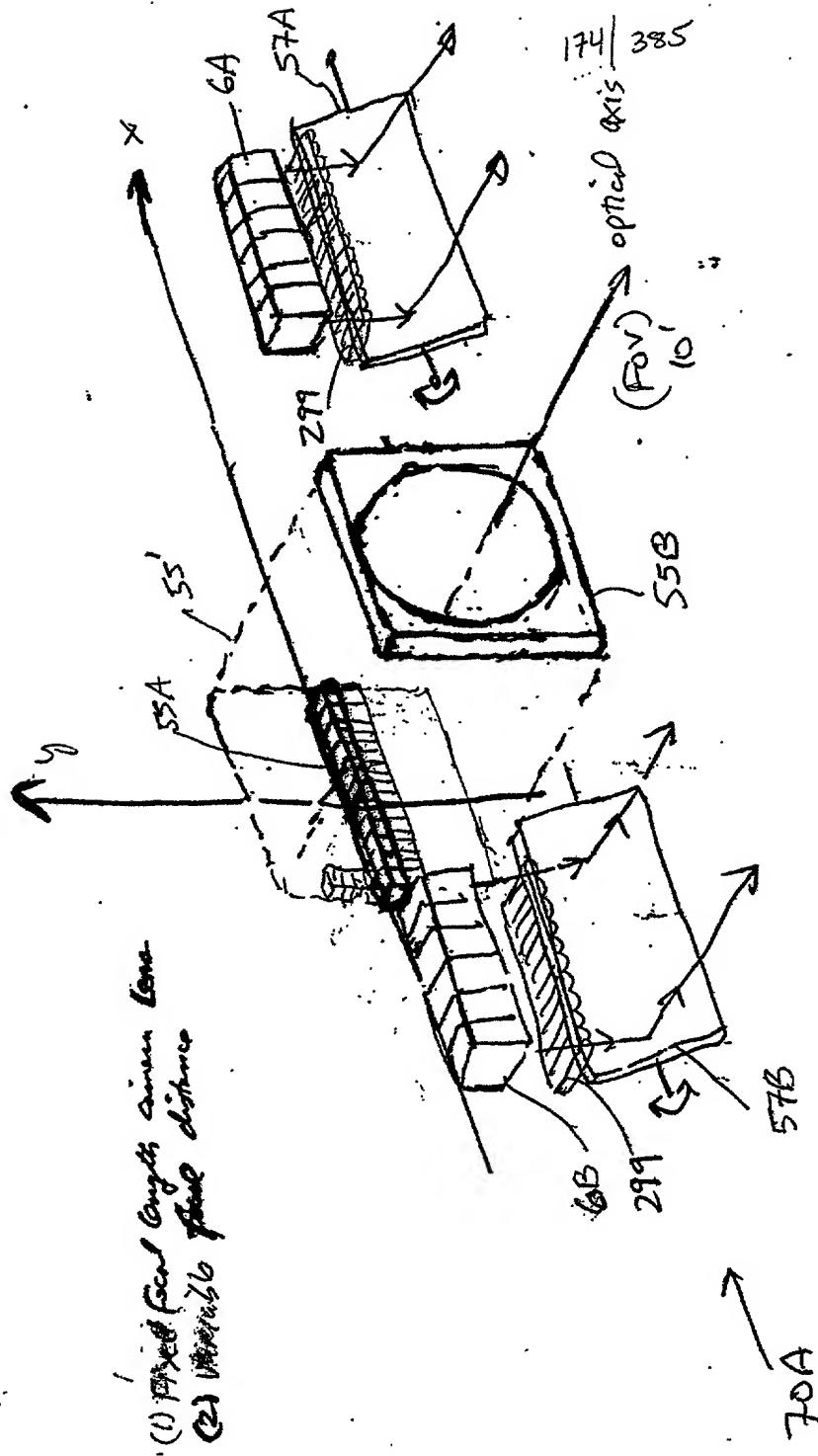


FIG. 5B2

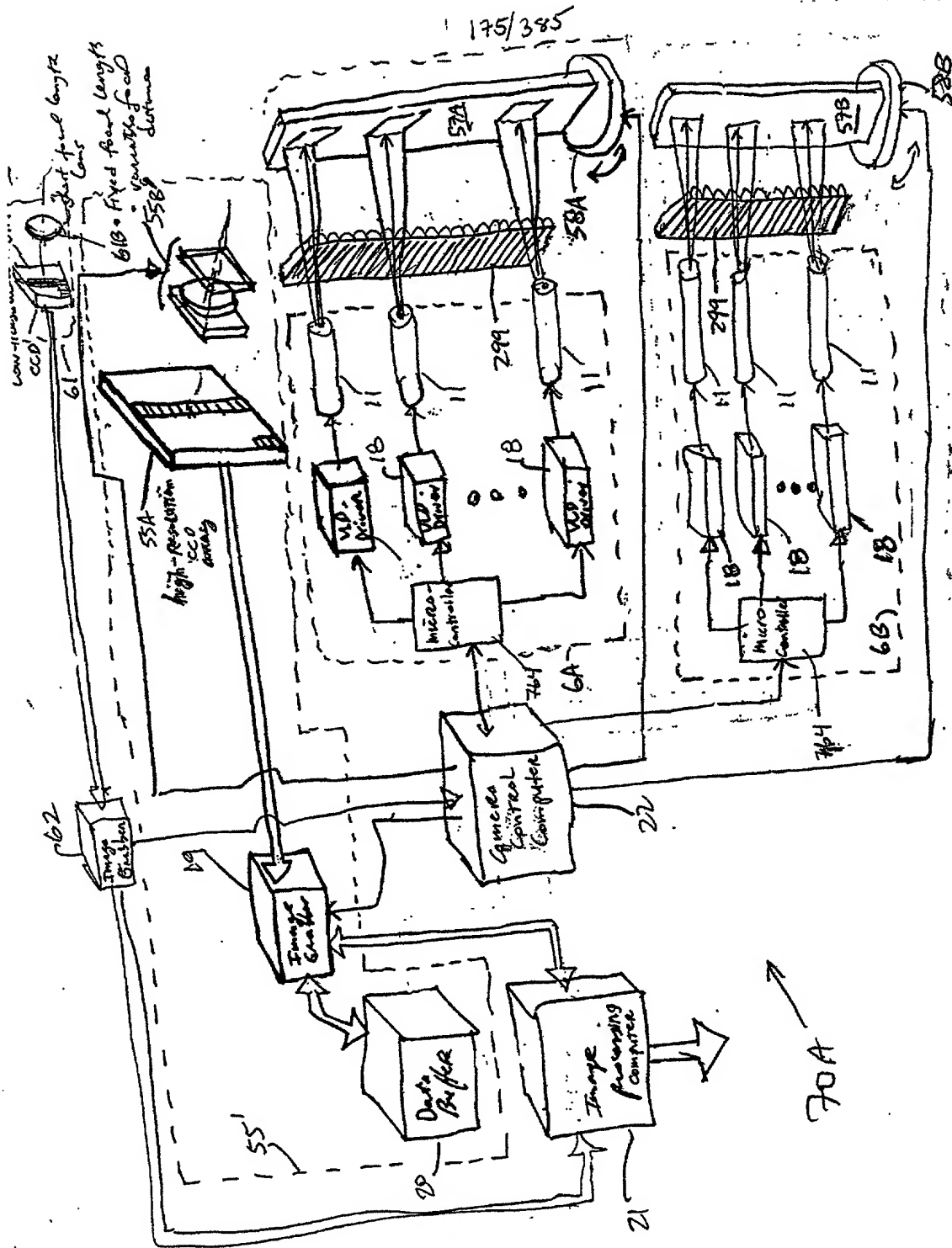


FIG. 5B3

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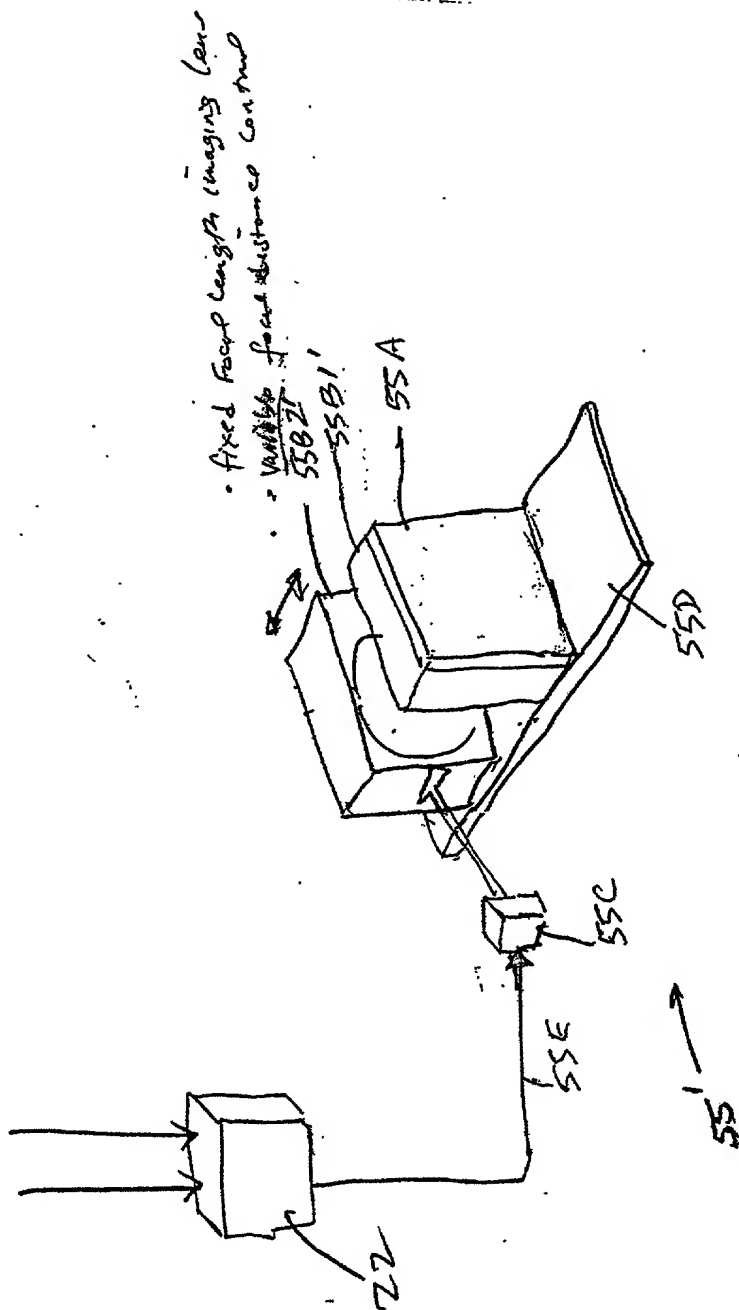


FIG. 5B4

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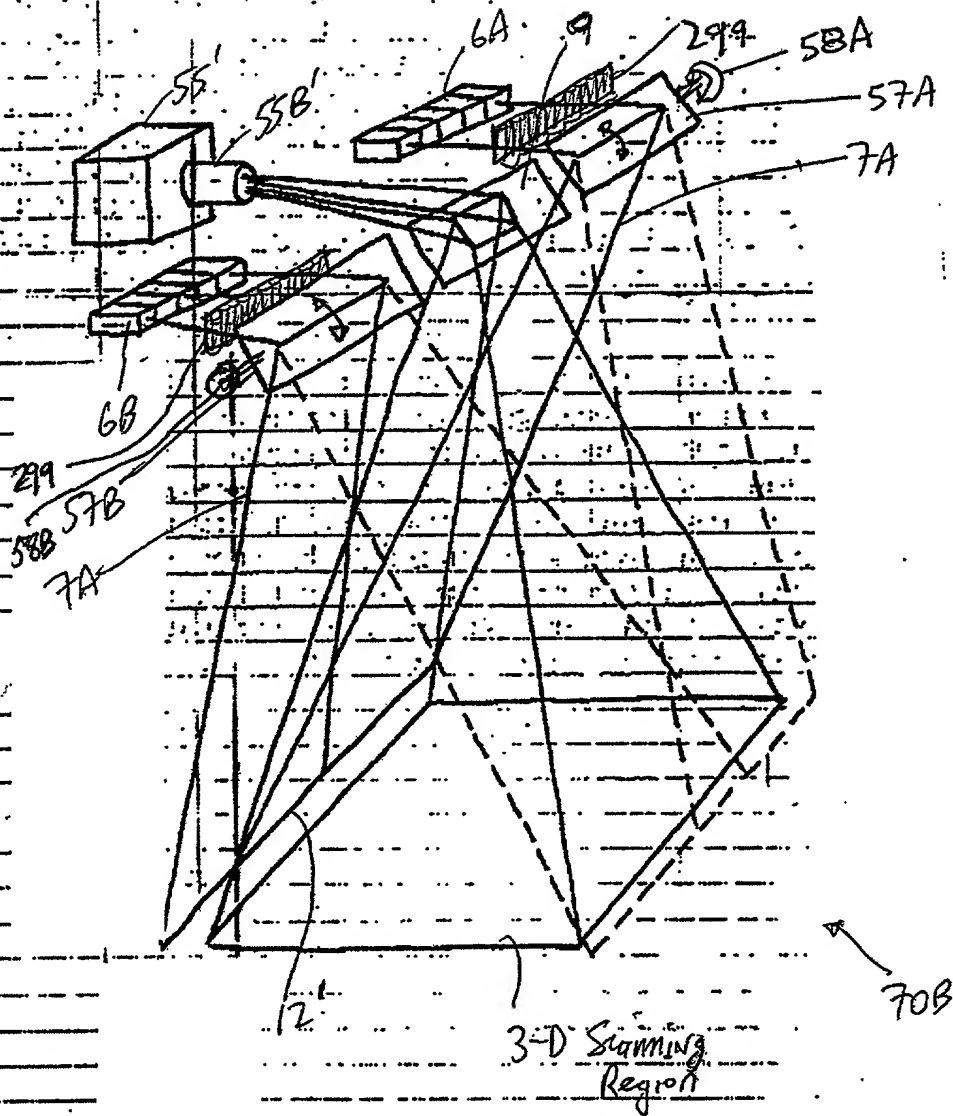


FIG. 5C1

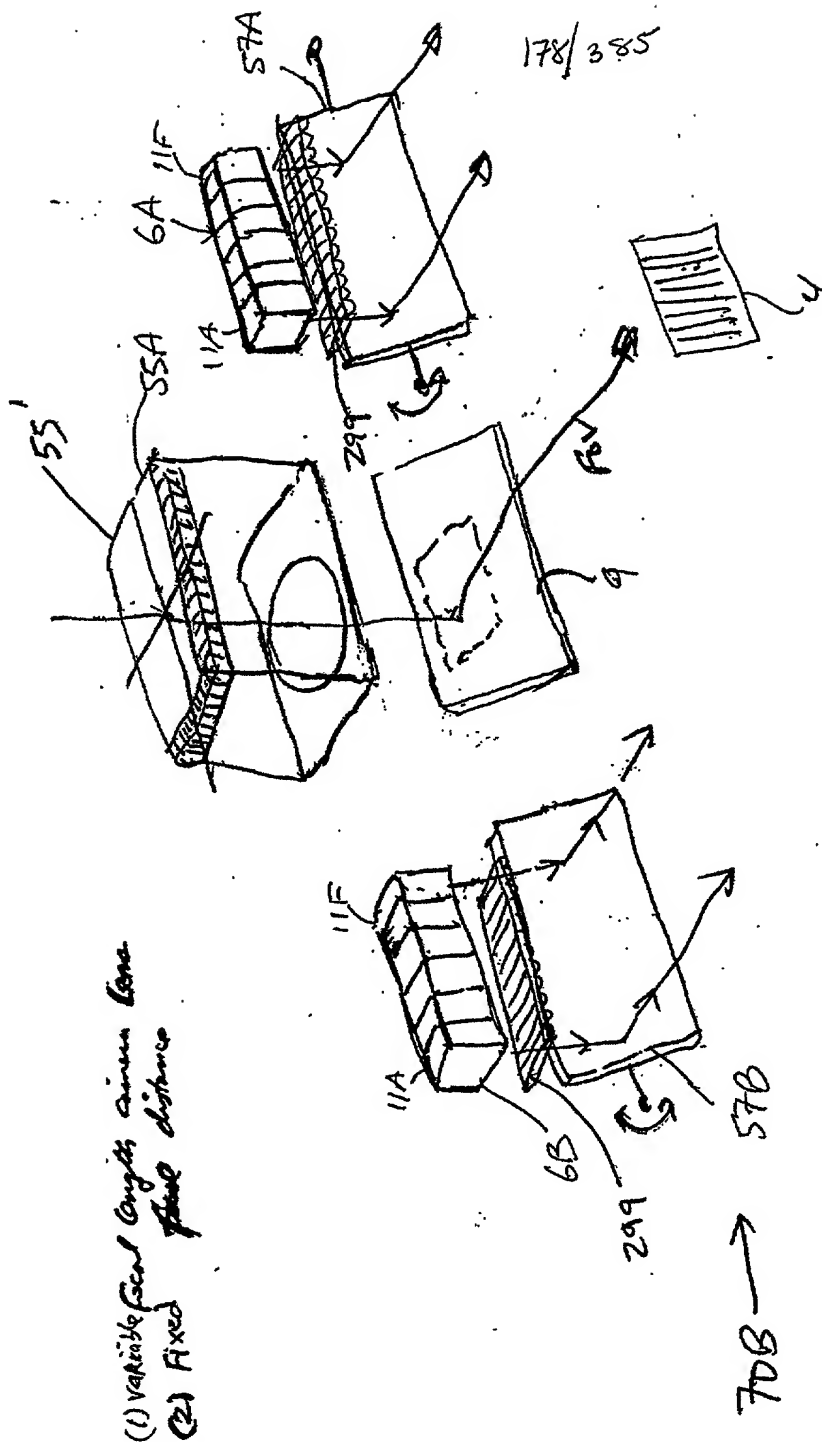


FIG. 5C

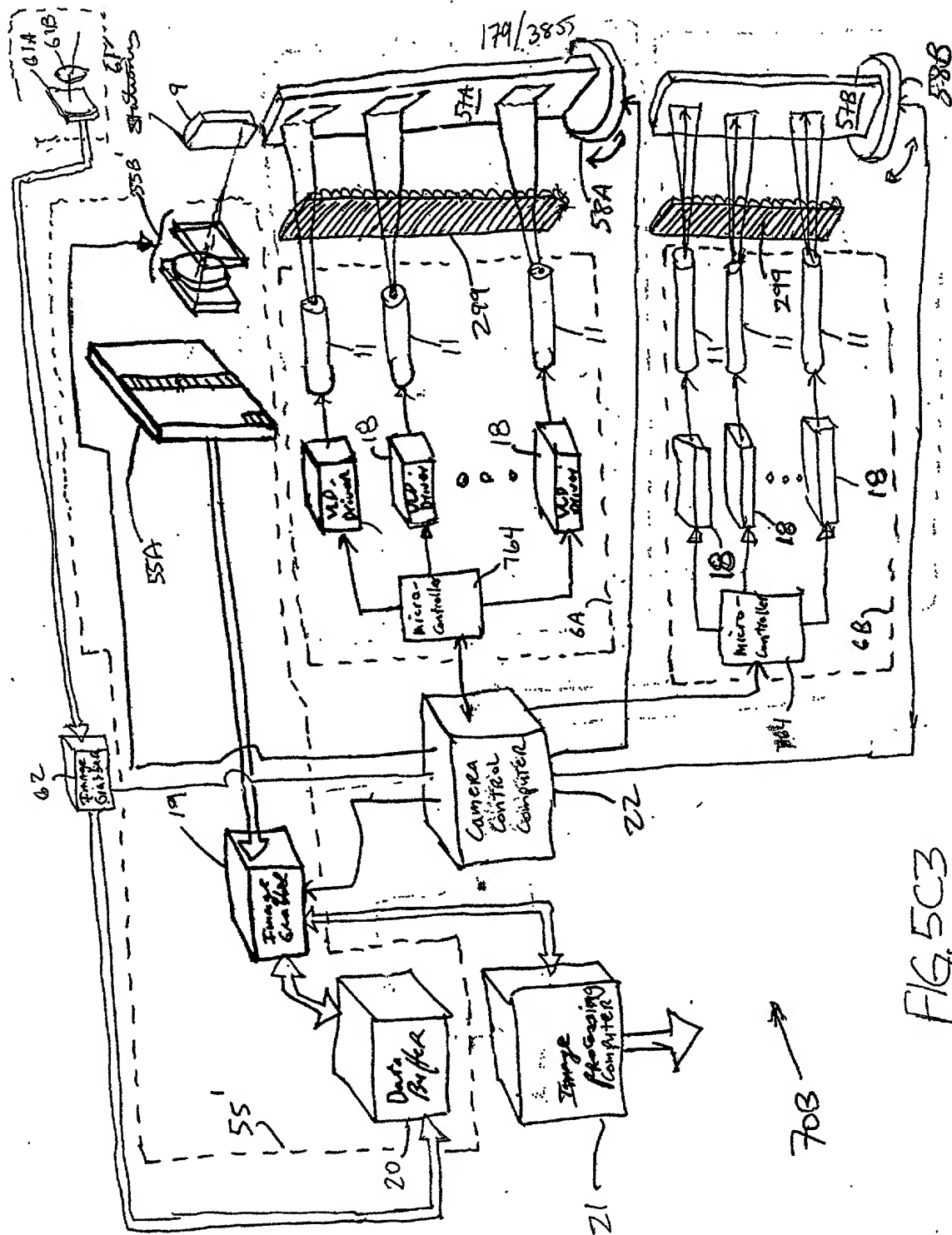


FIG. 5C3

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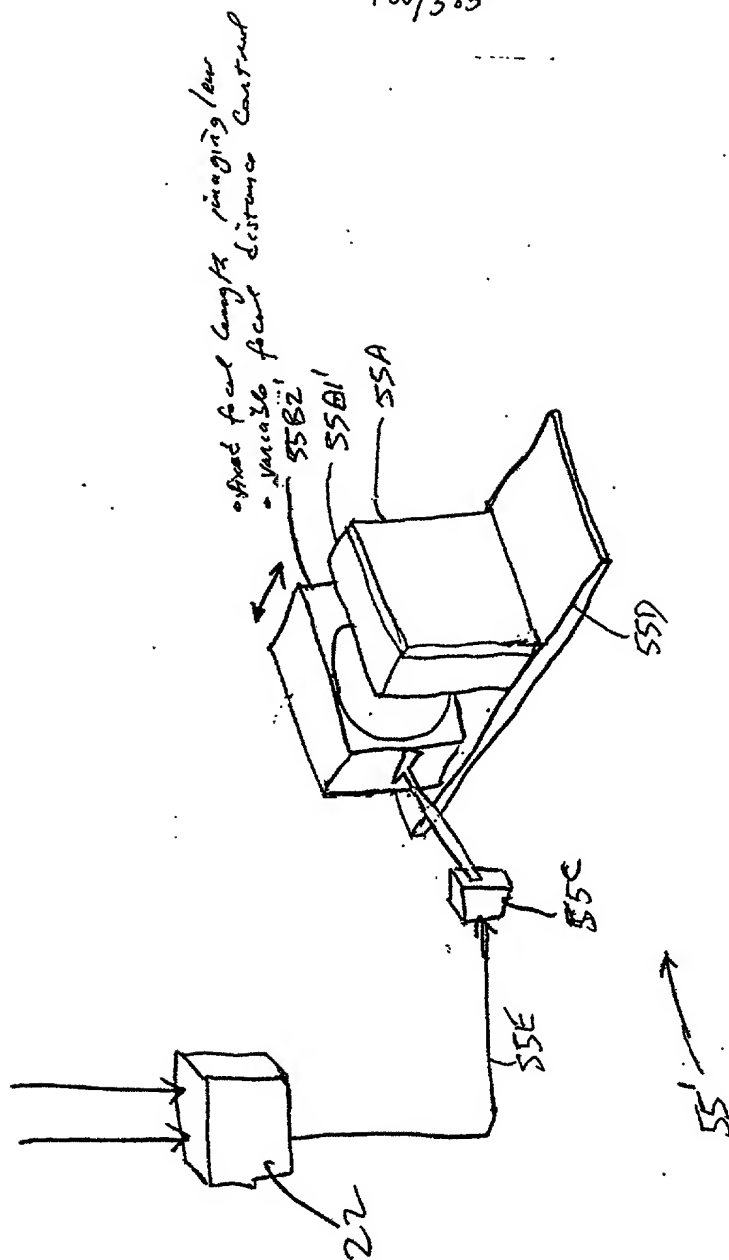


FIG. 5C

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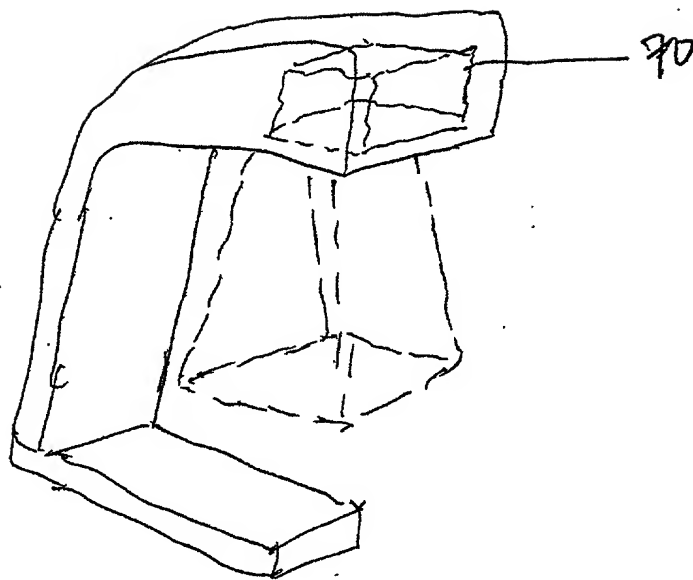


FIG. 5D

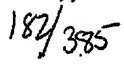


FIG. 6A

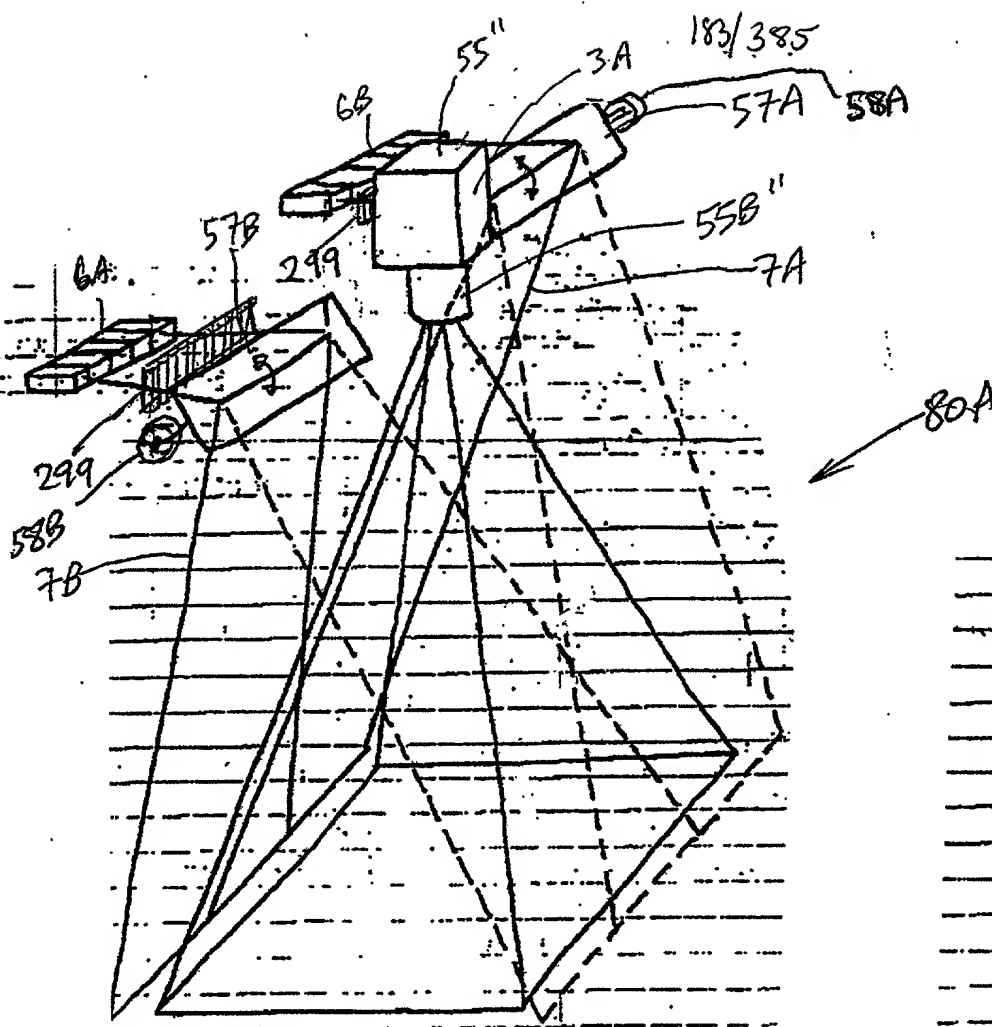


FIG. 6B1

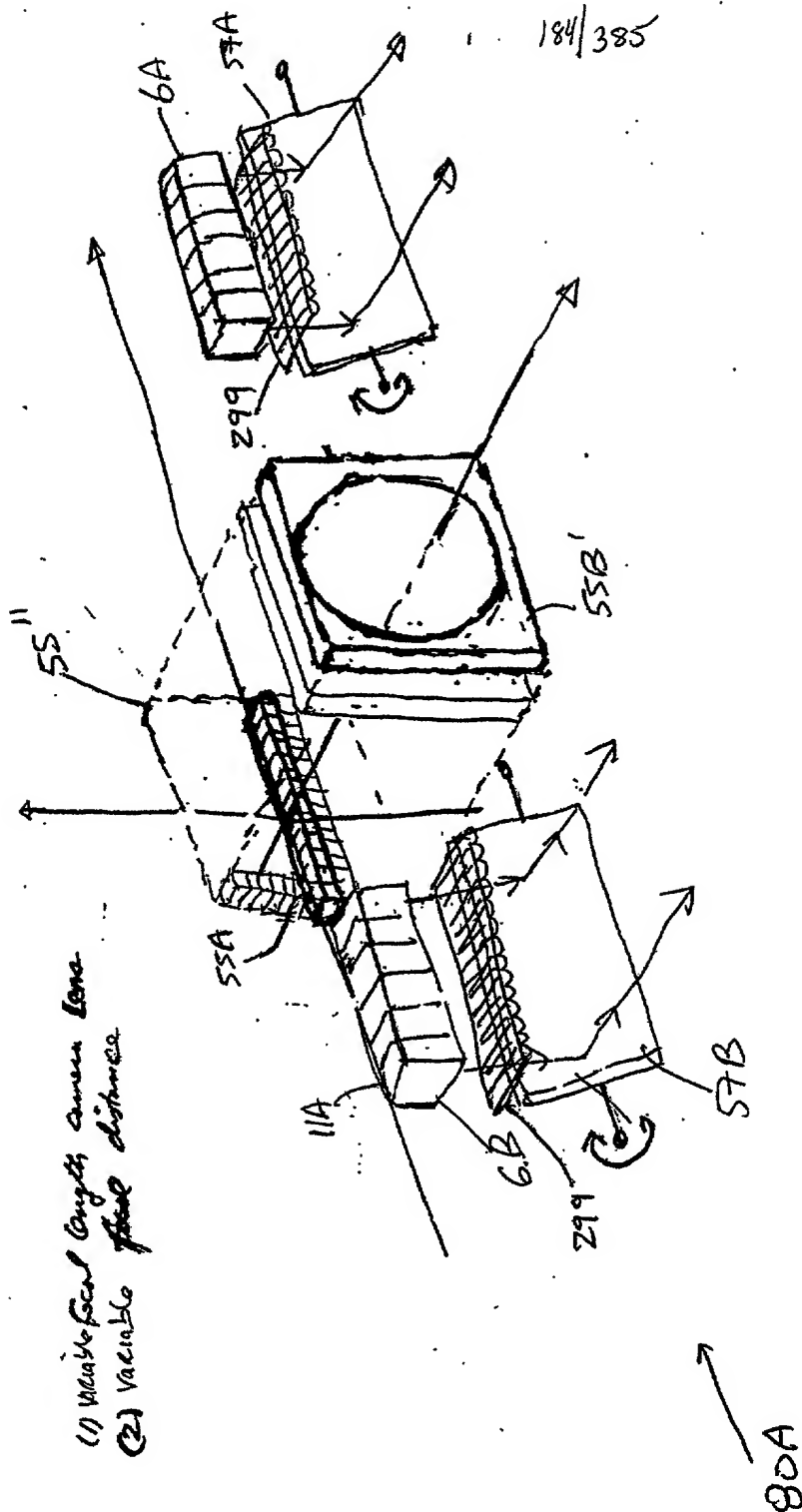


FIG. 6B2

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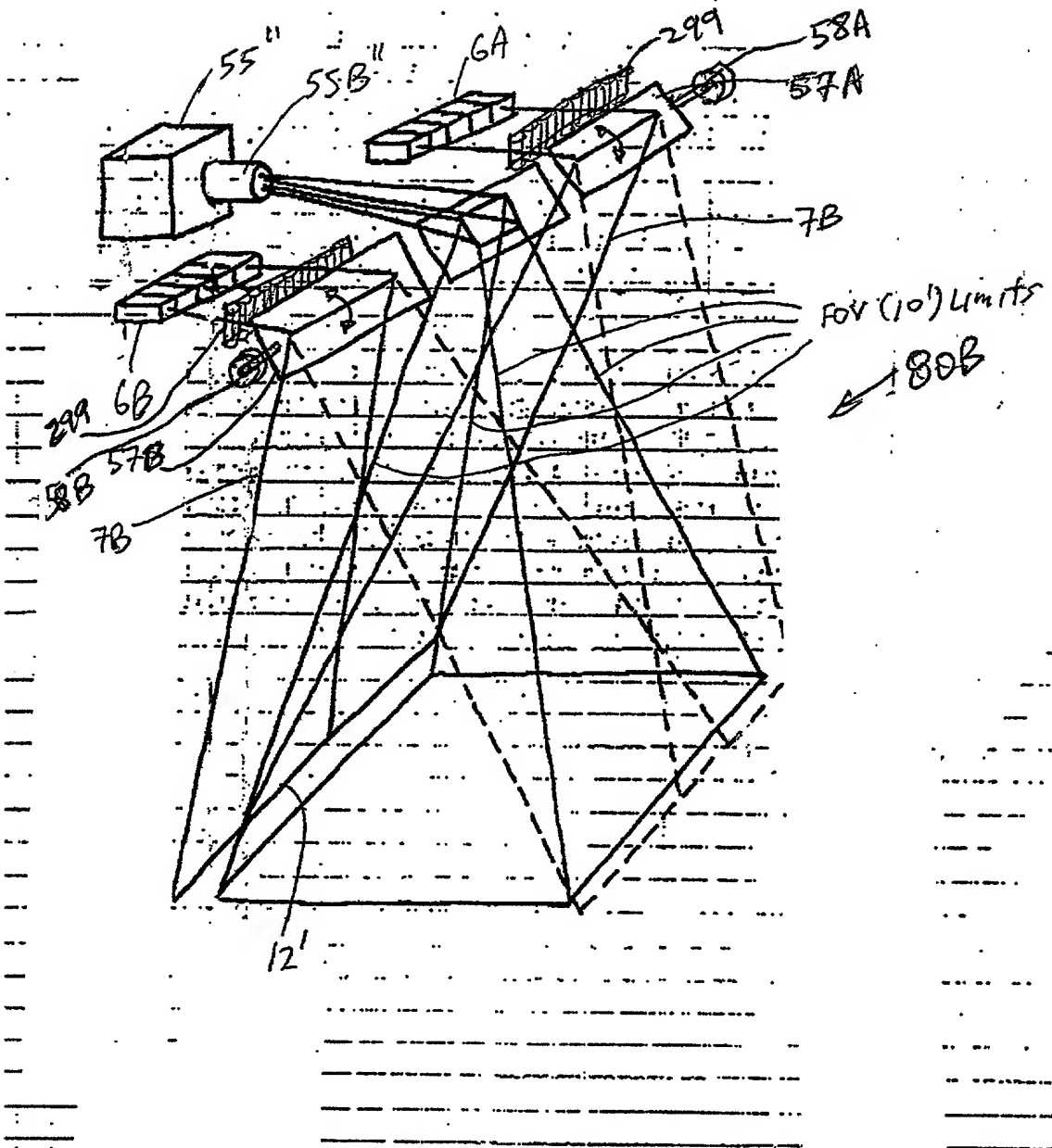


FIG. 6C1

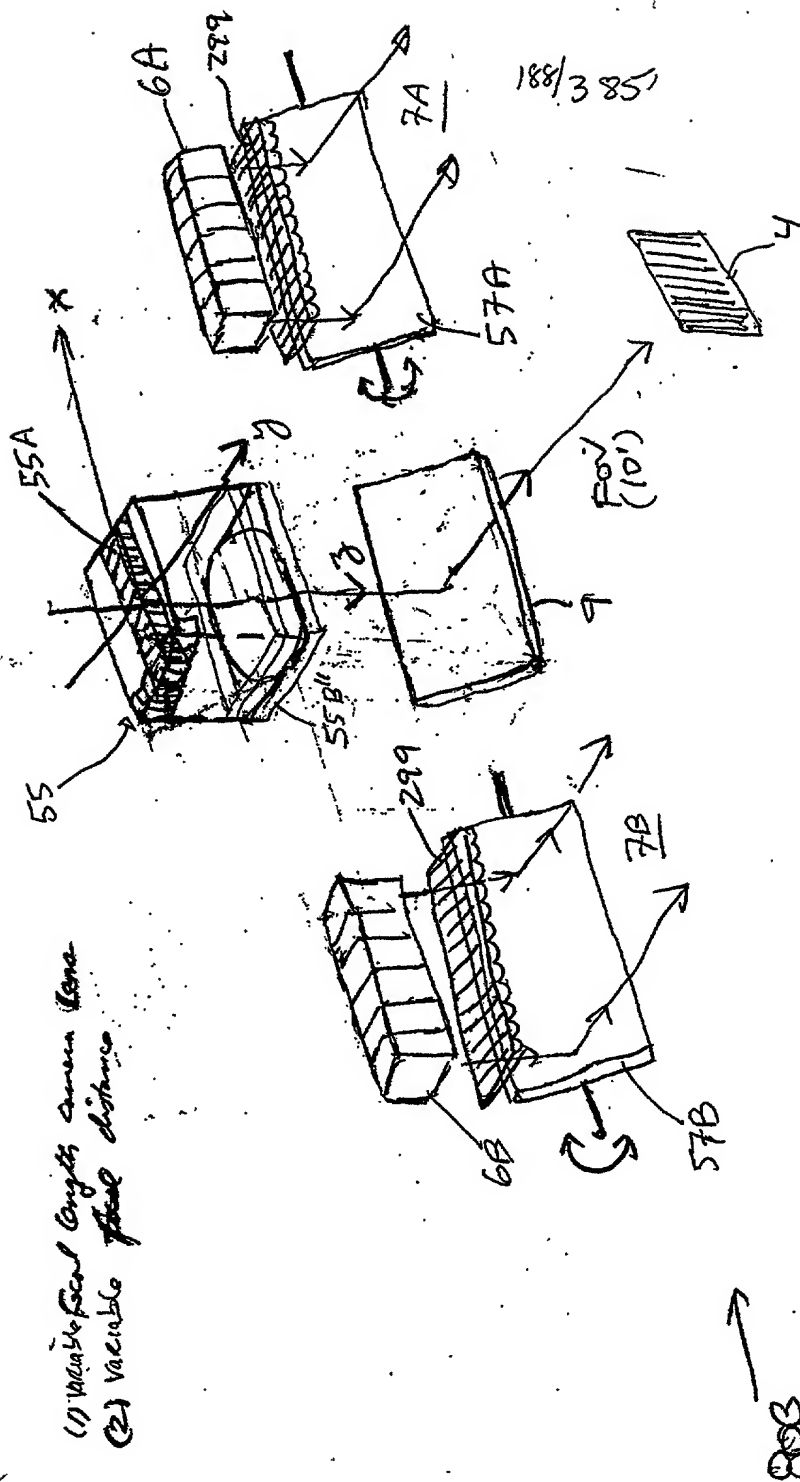


FIG. 6C2

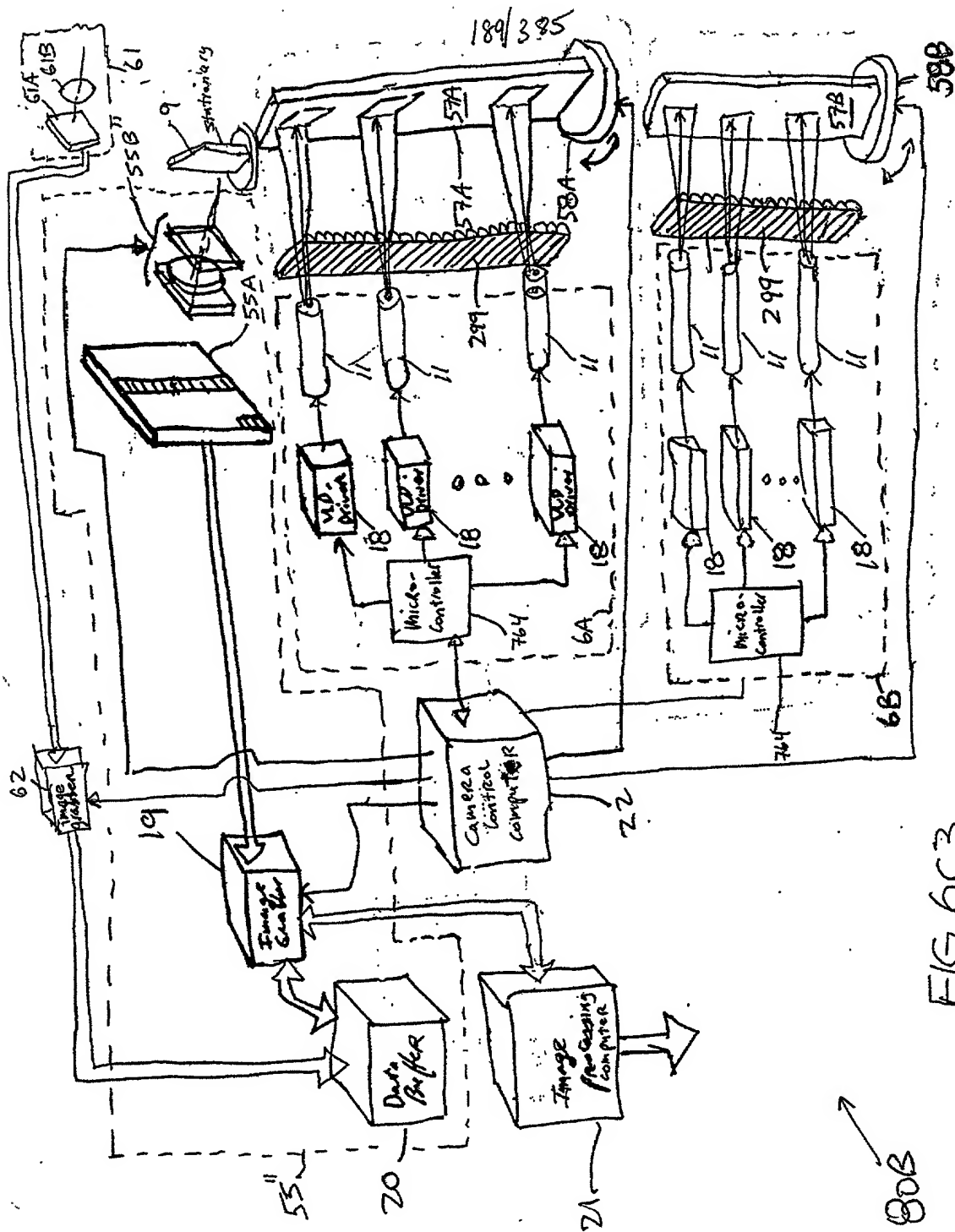


FIG. 6C3

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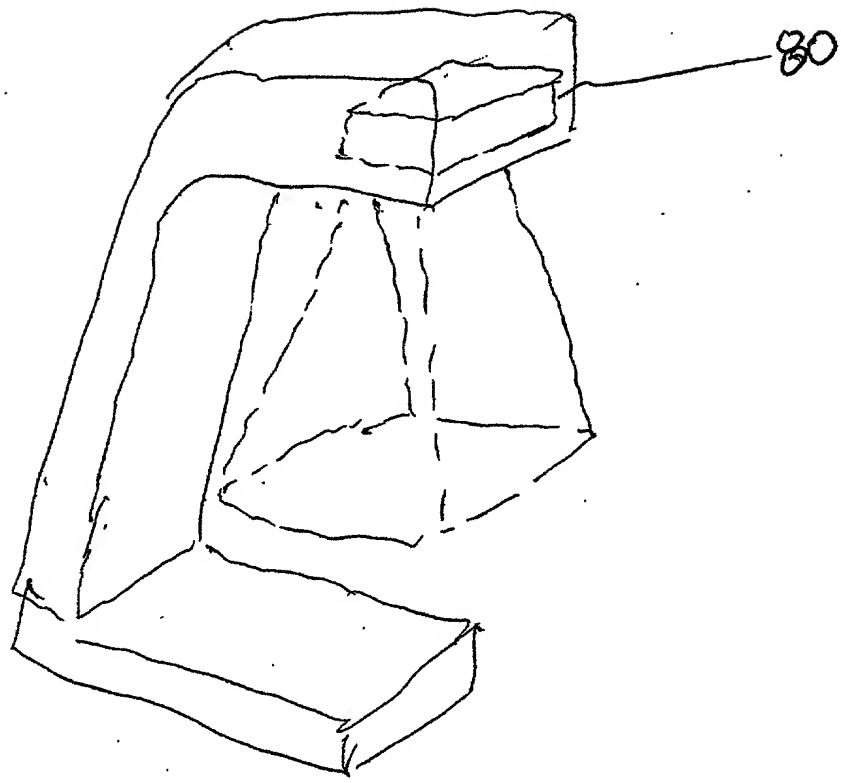
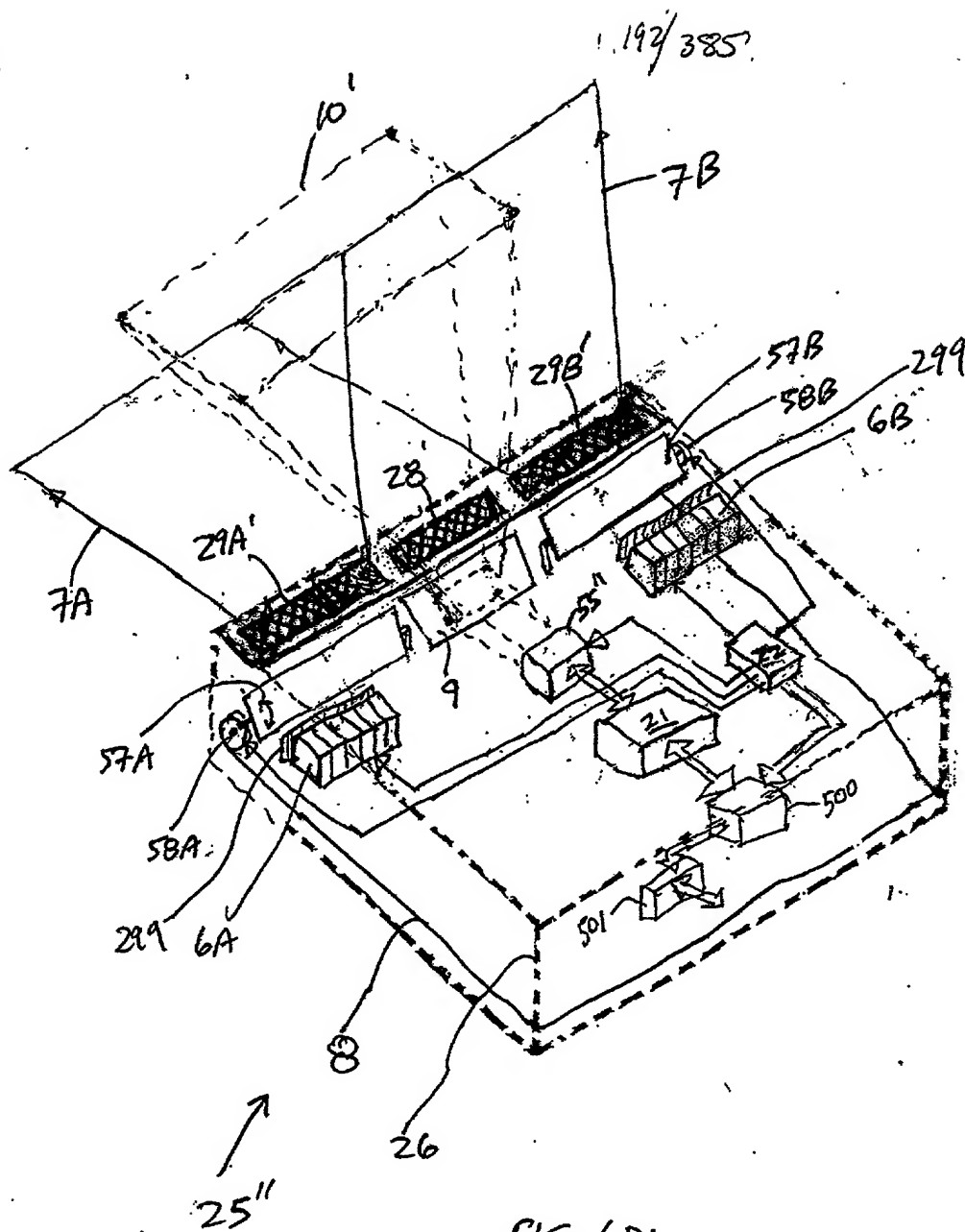


FIG. 6C5

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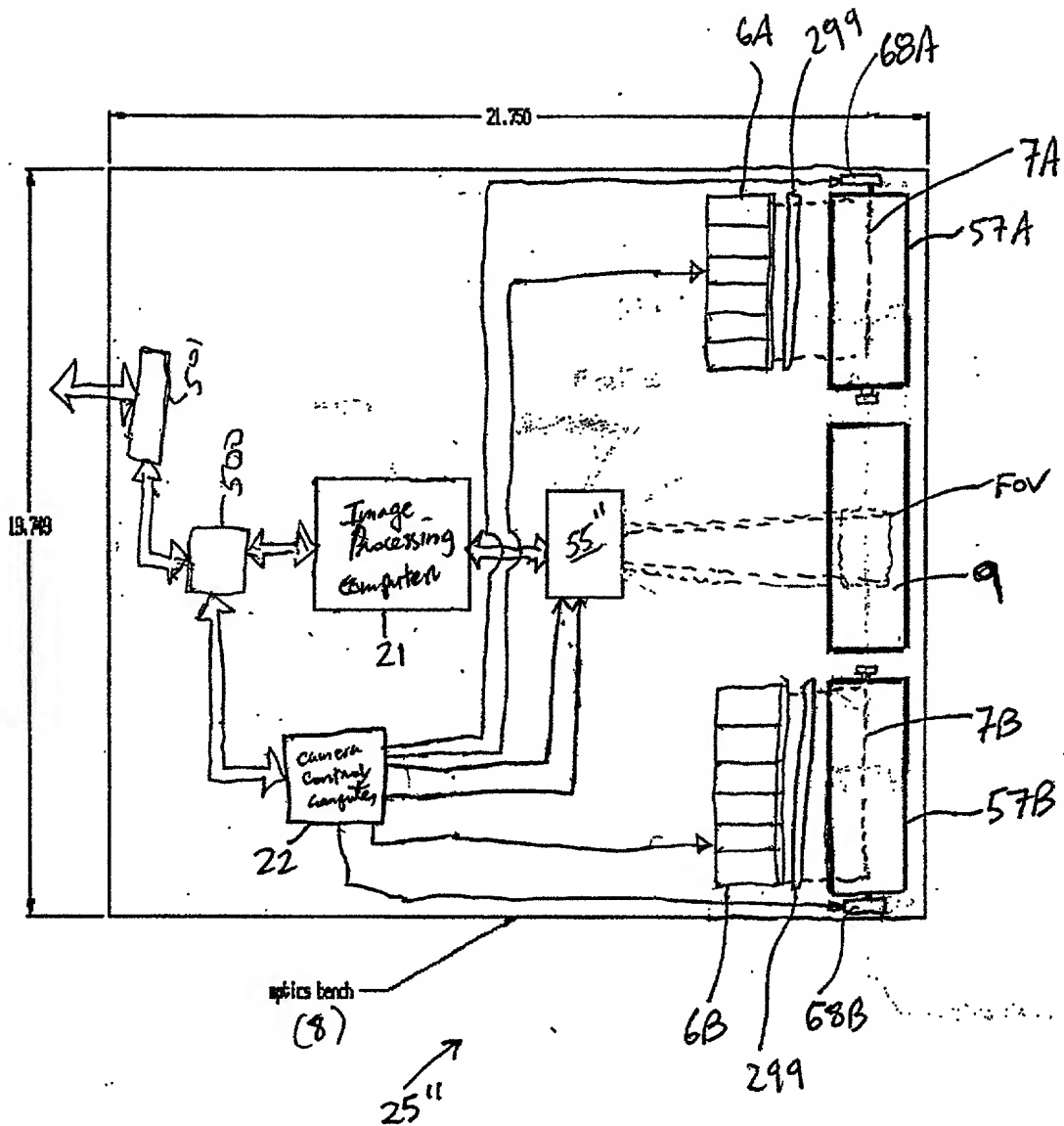
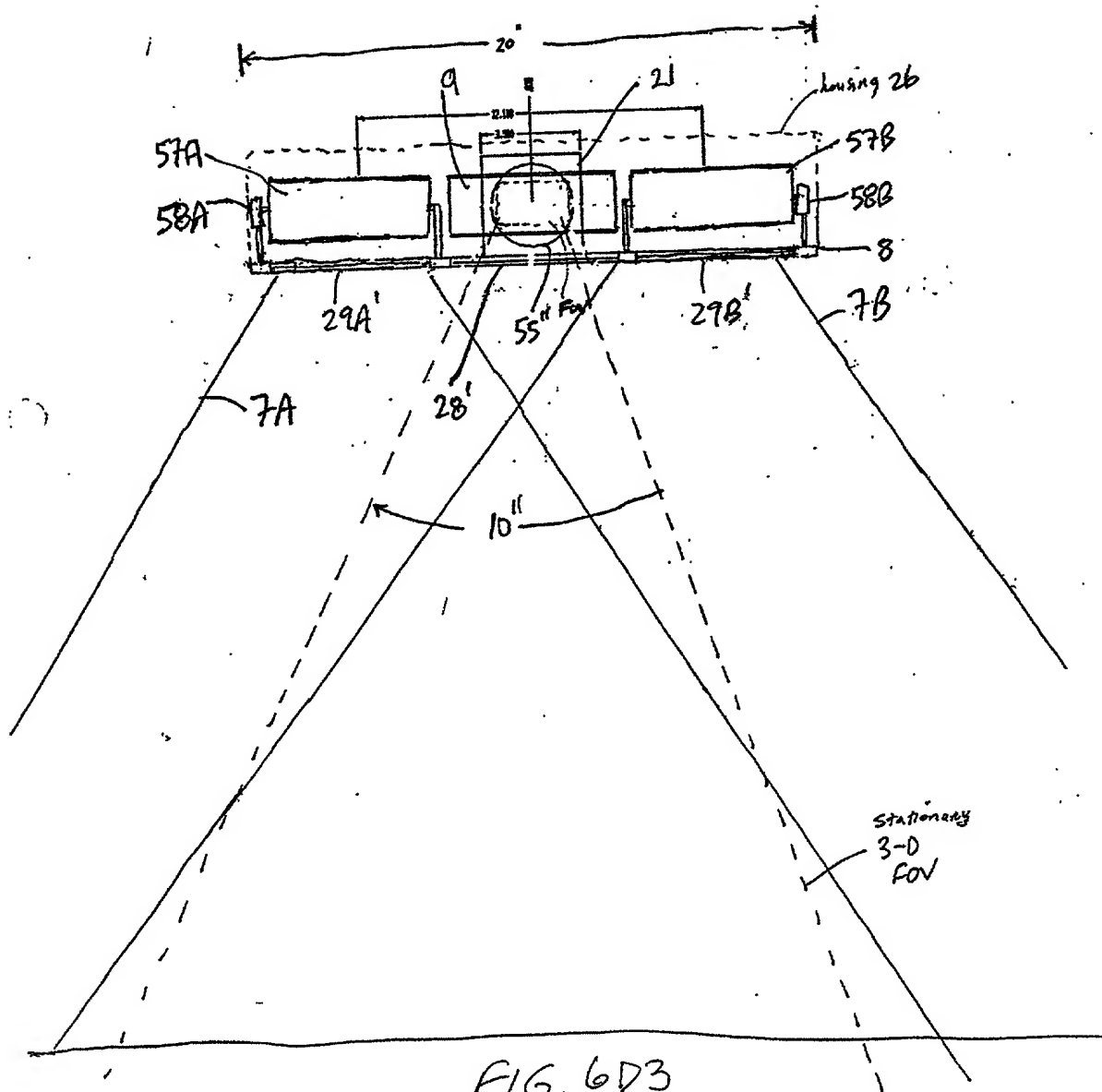


FIG. 6D2

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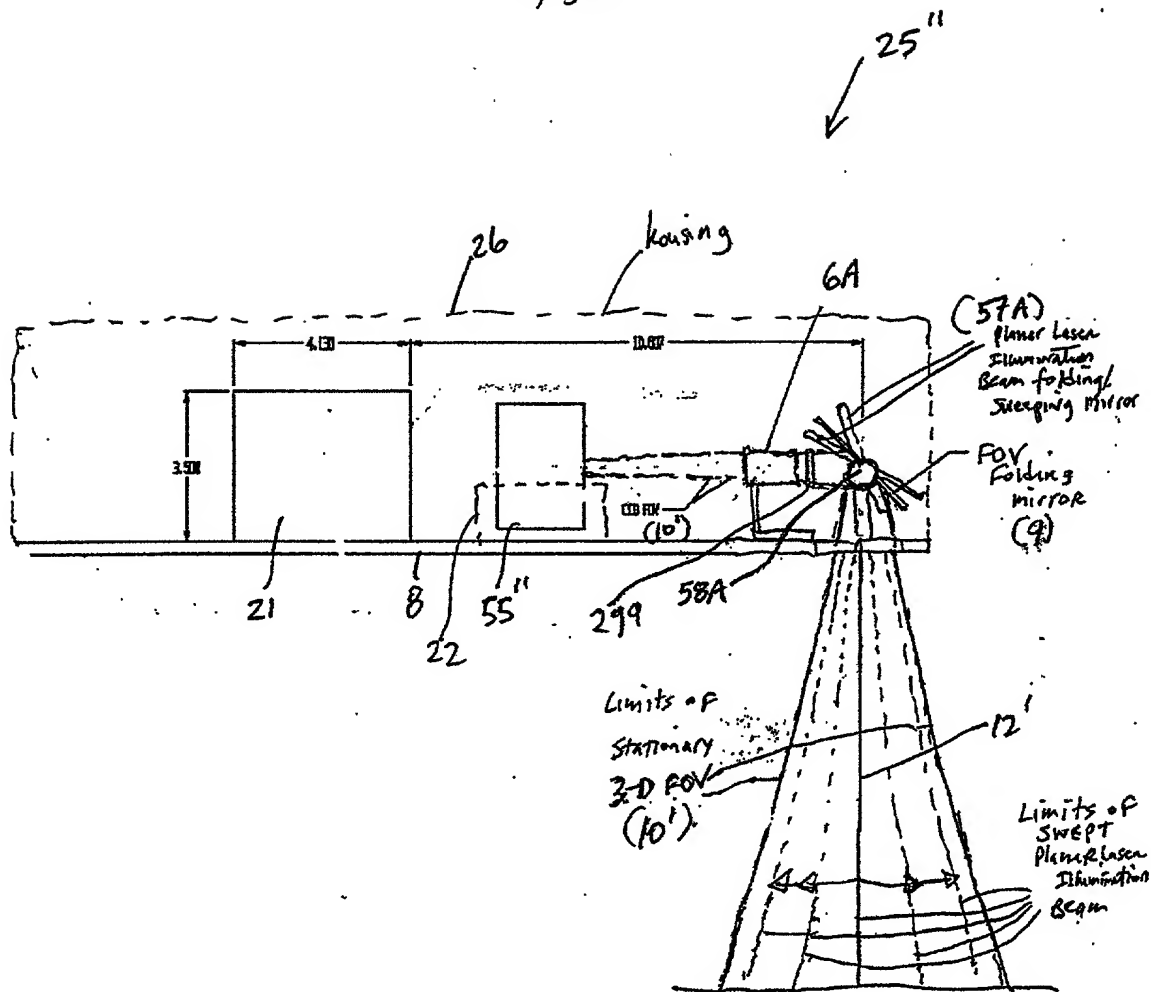


FIG. 6D4

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Variable FOV

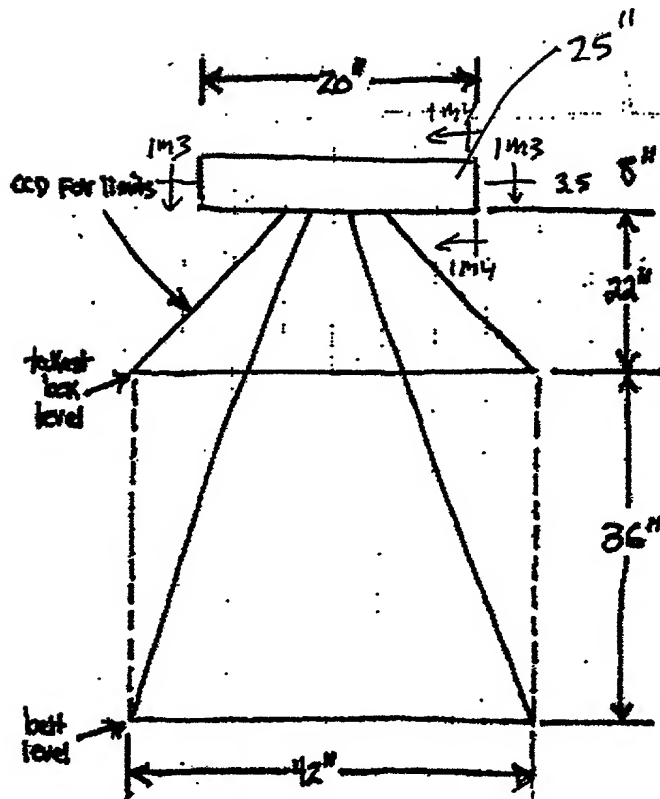


FIG. 6D5

2025 RELEASE UNDER E.O. 14176

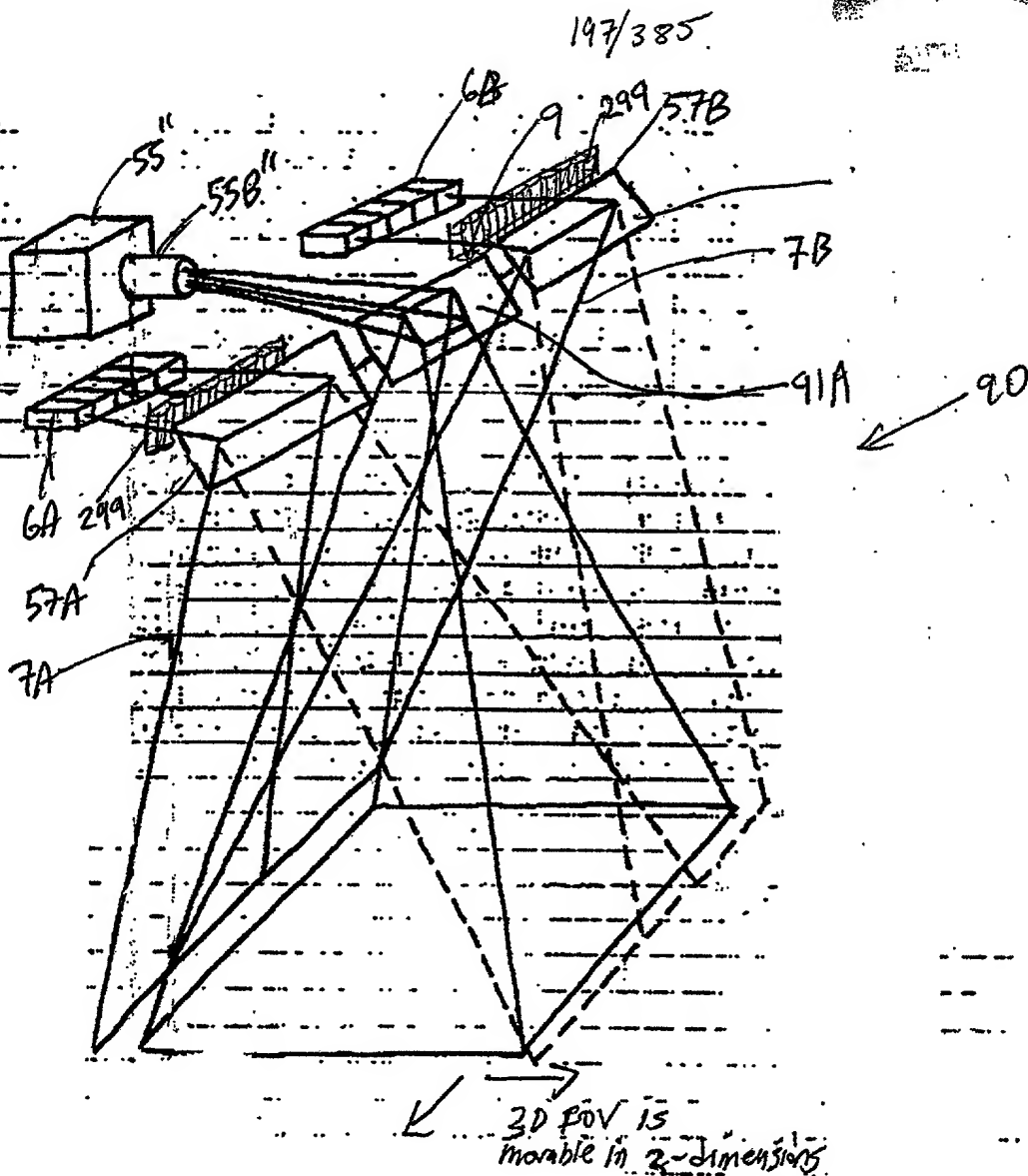
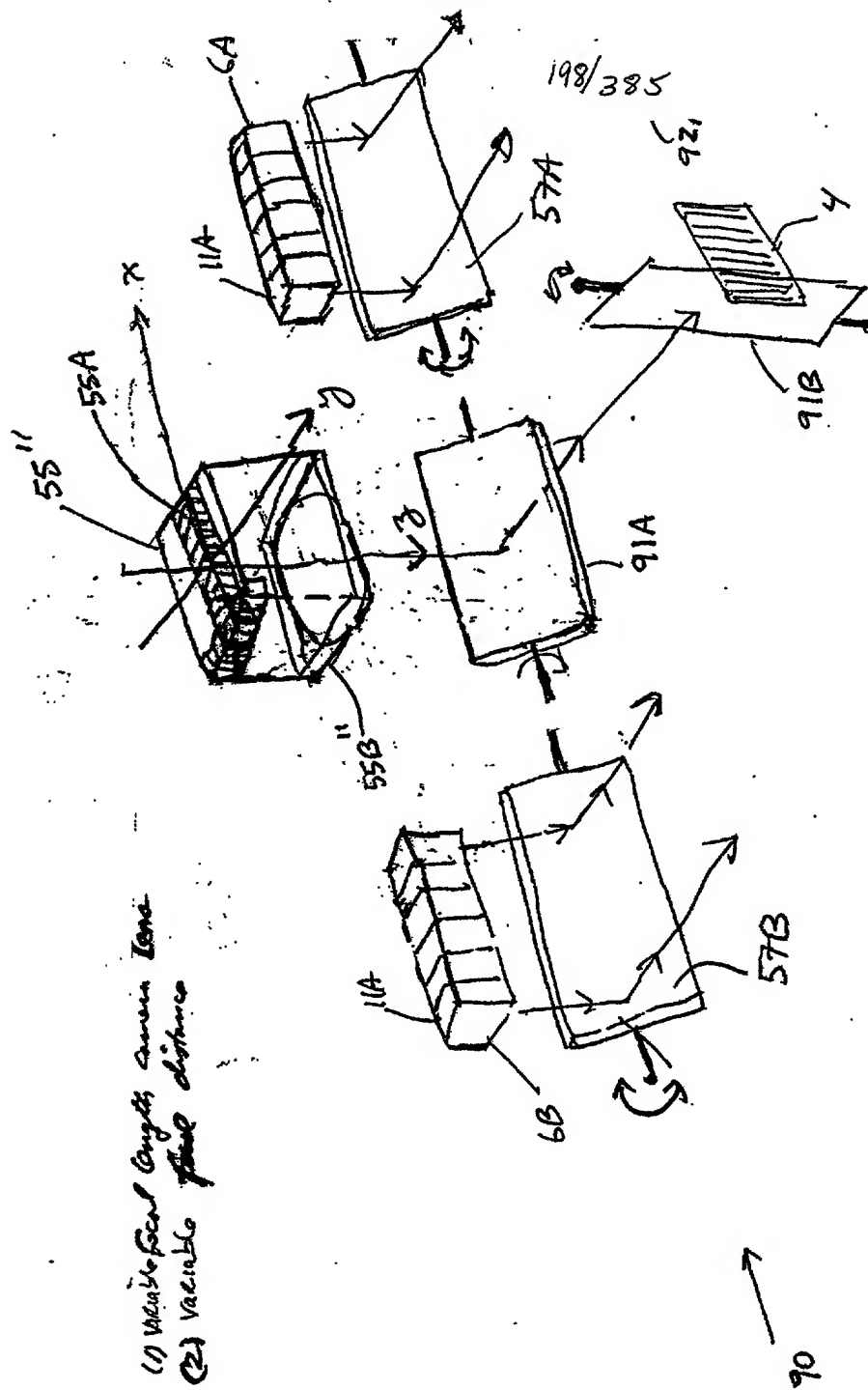
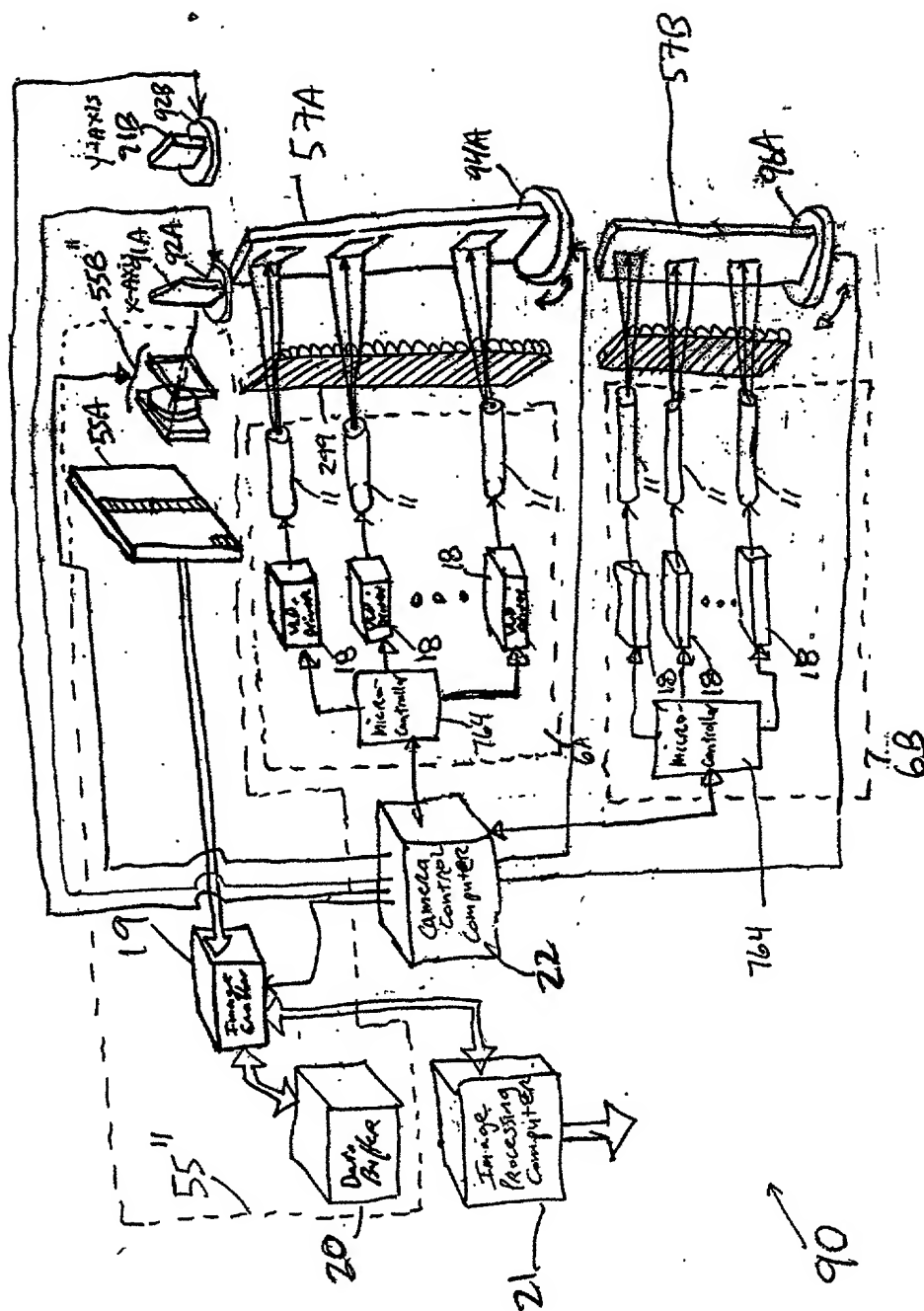
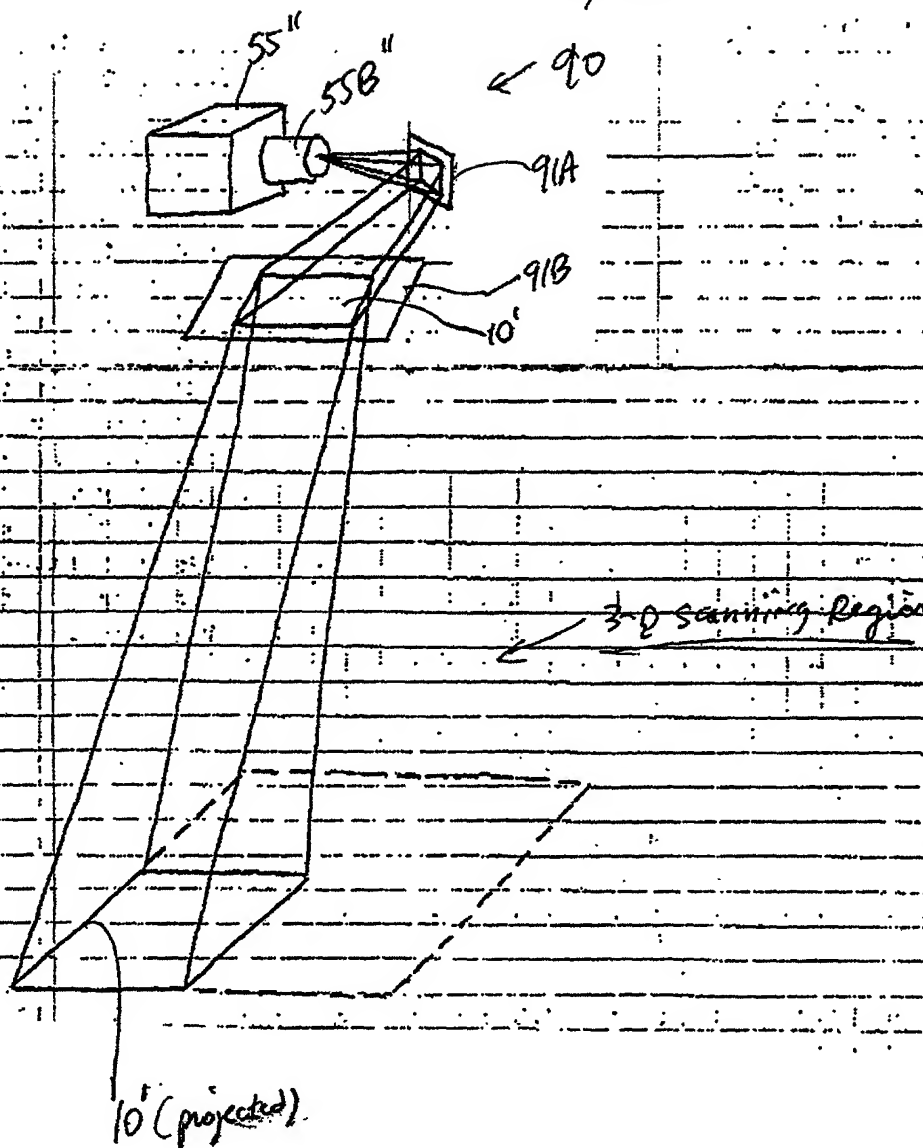


FIG 6E1





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— FIG. 6E4

20110101 000000

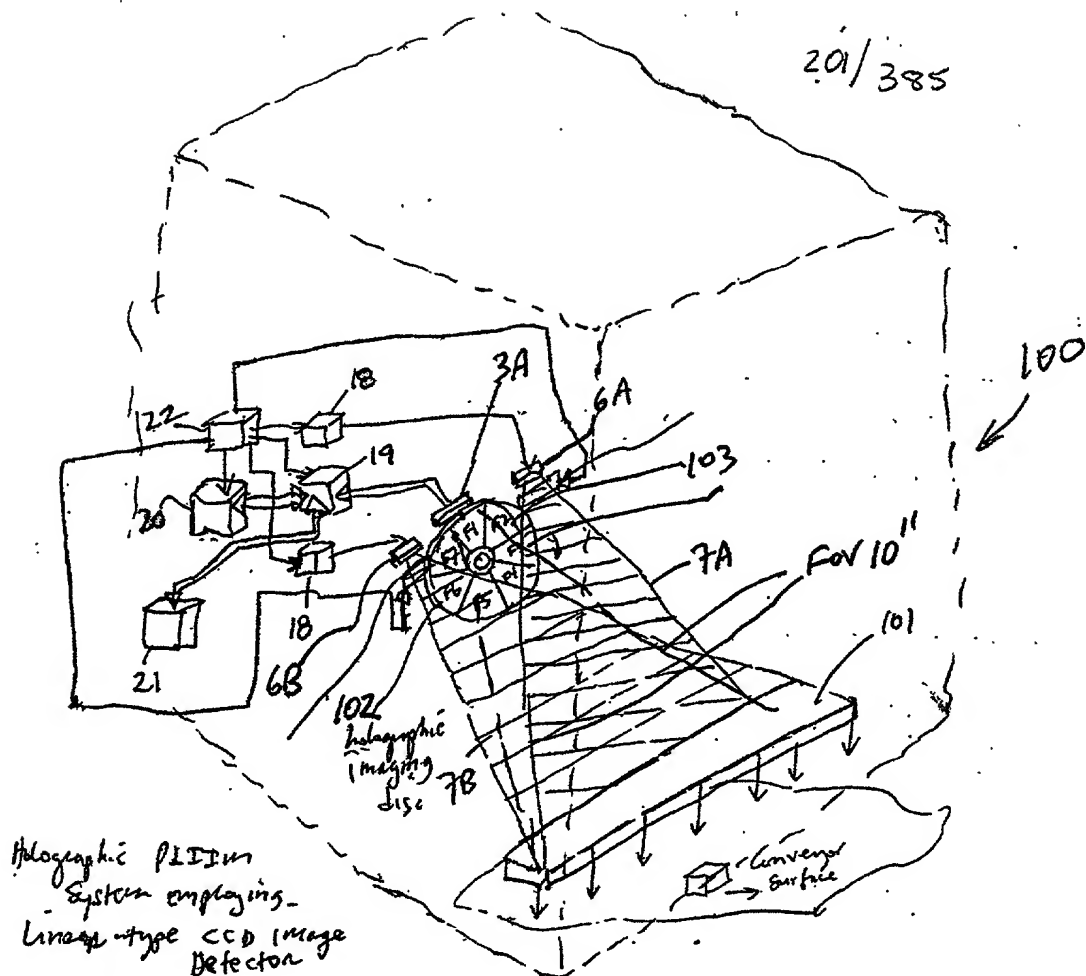


FIG. 7A

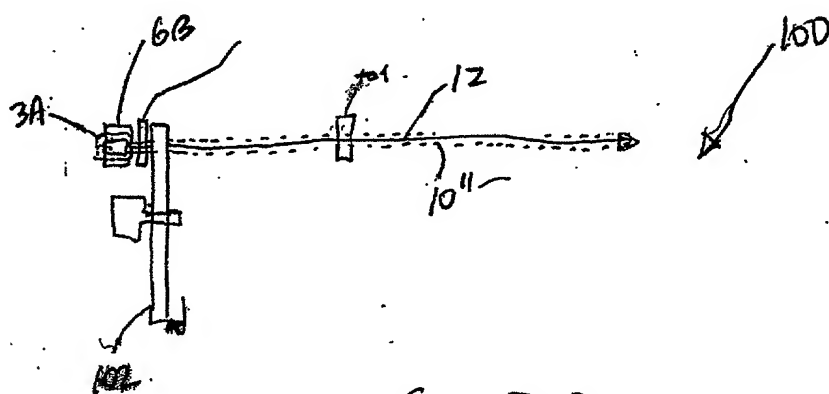
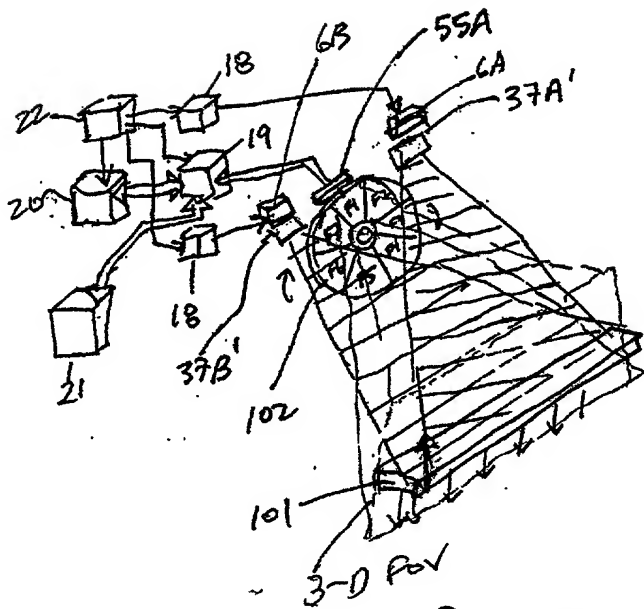


FIG. 7B

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Holographic PLIEM
System employing
Area-Type
CCD Image
Detector
100

FIG. 8A

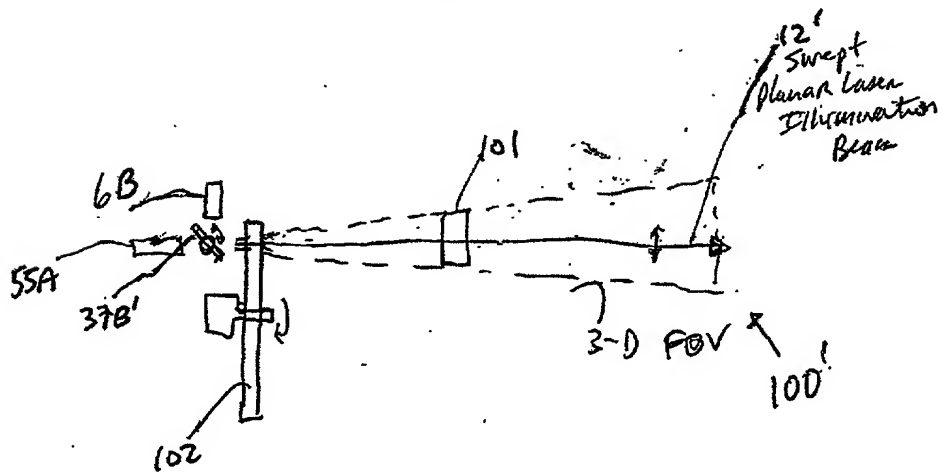


FIG. 8B

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1-D CCD SCANNER EMBODIMENT

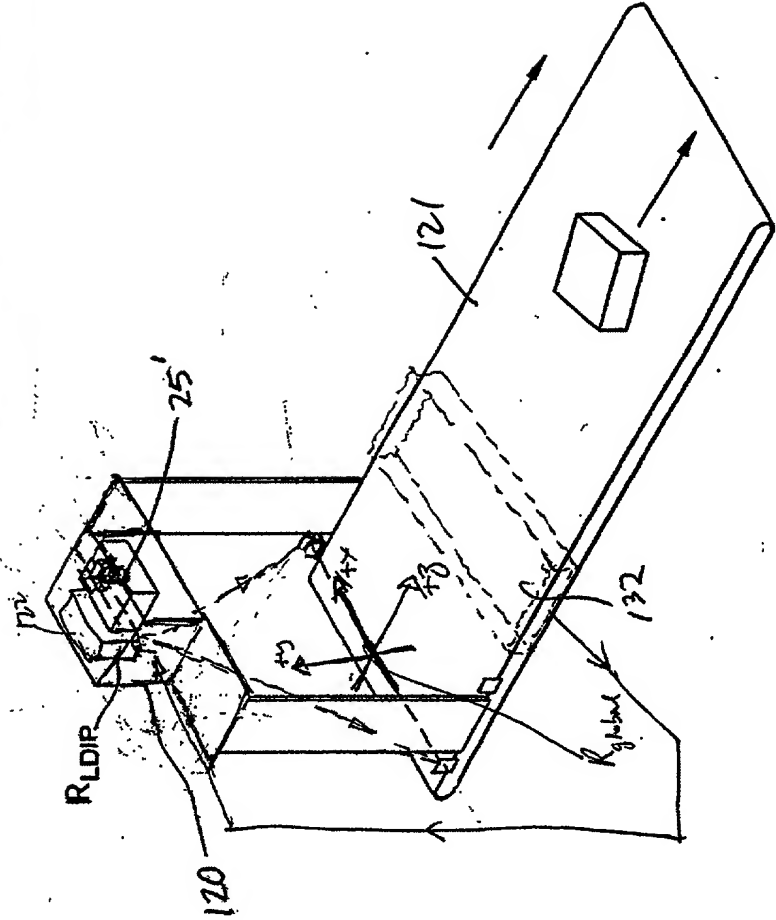


FIG. 9

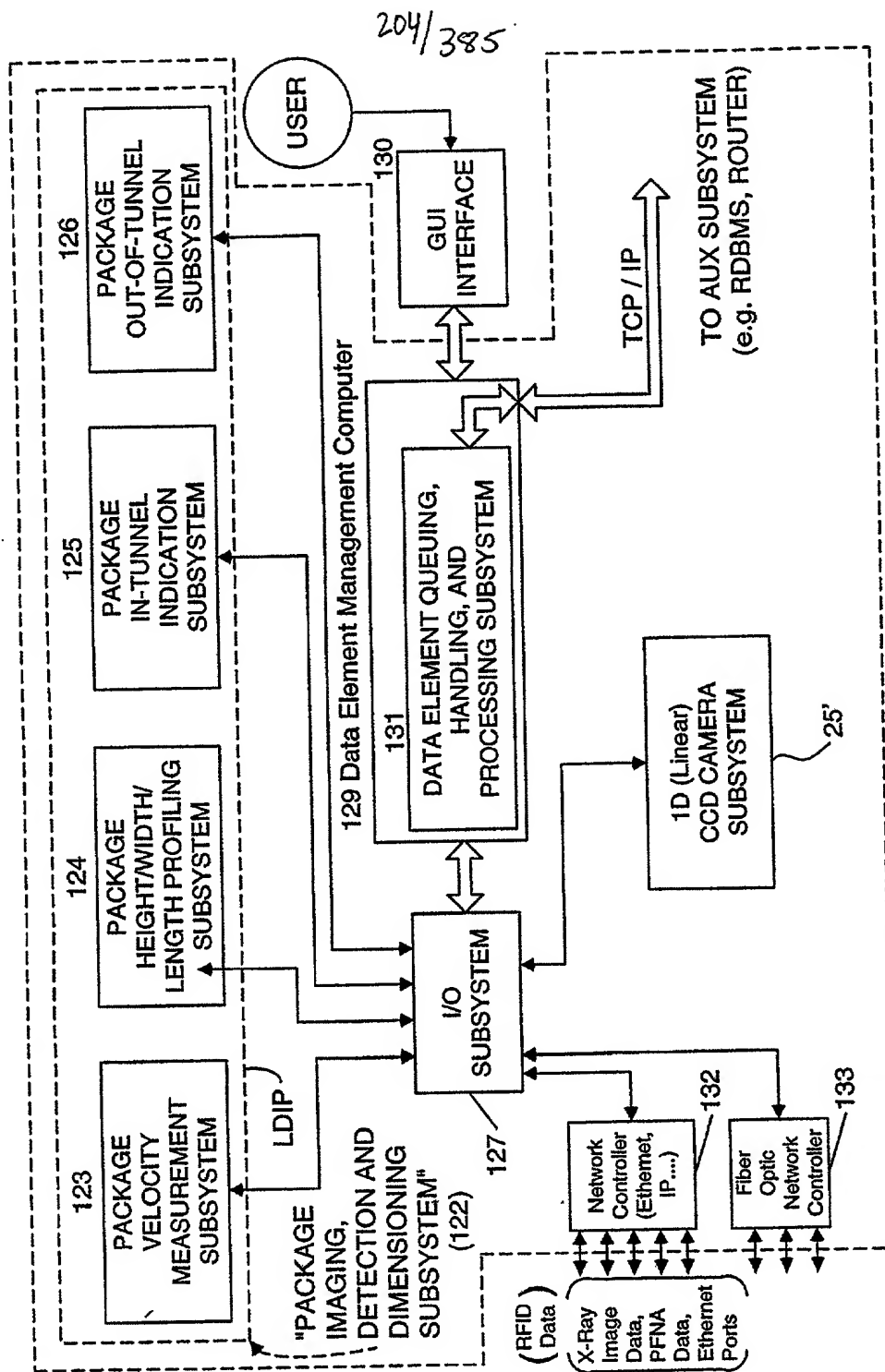


FIG. 10

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Data Element Queuing, Handling, and Processing Subsystem (131)

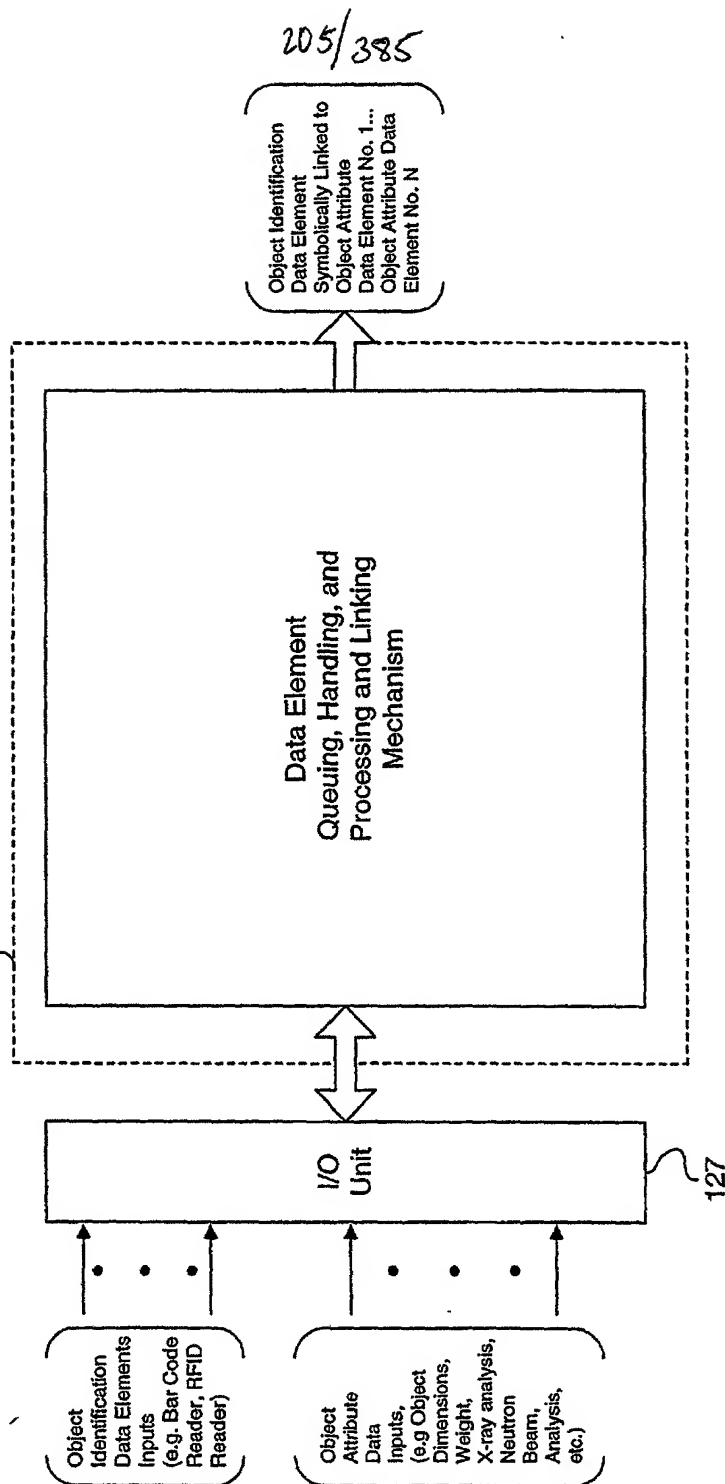


FIG. 10A

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- C. Specification of Object Attribute Acquisition Capability of System**



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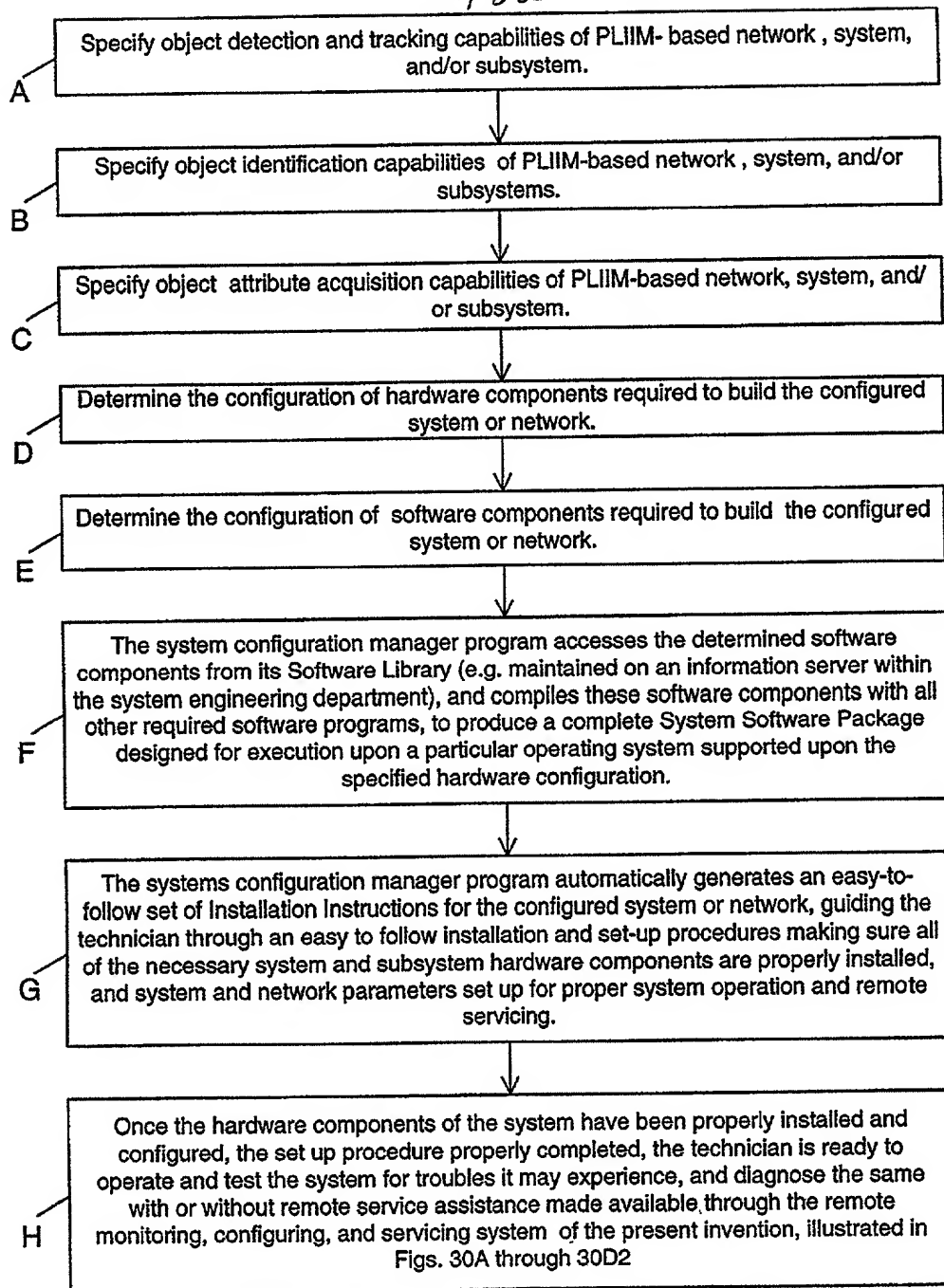


FIG. 10C

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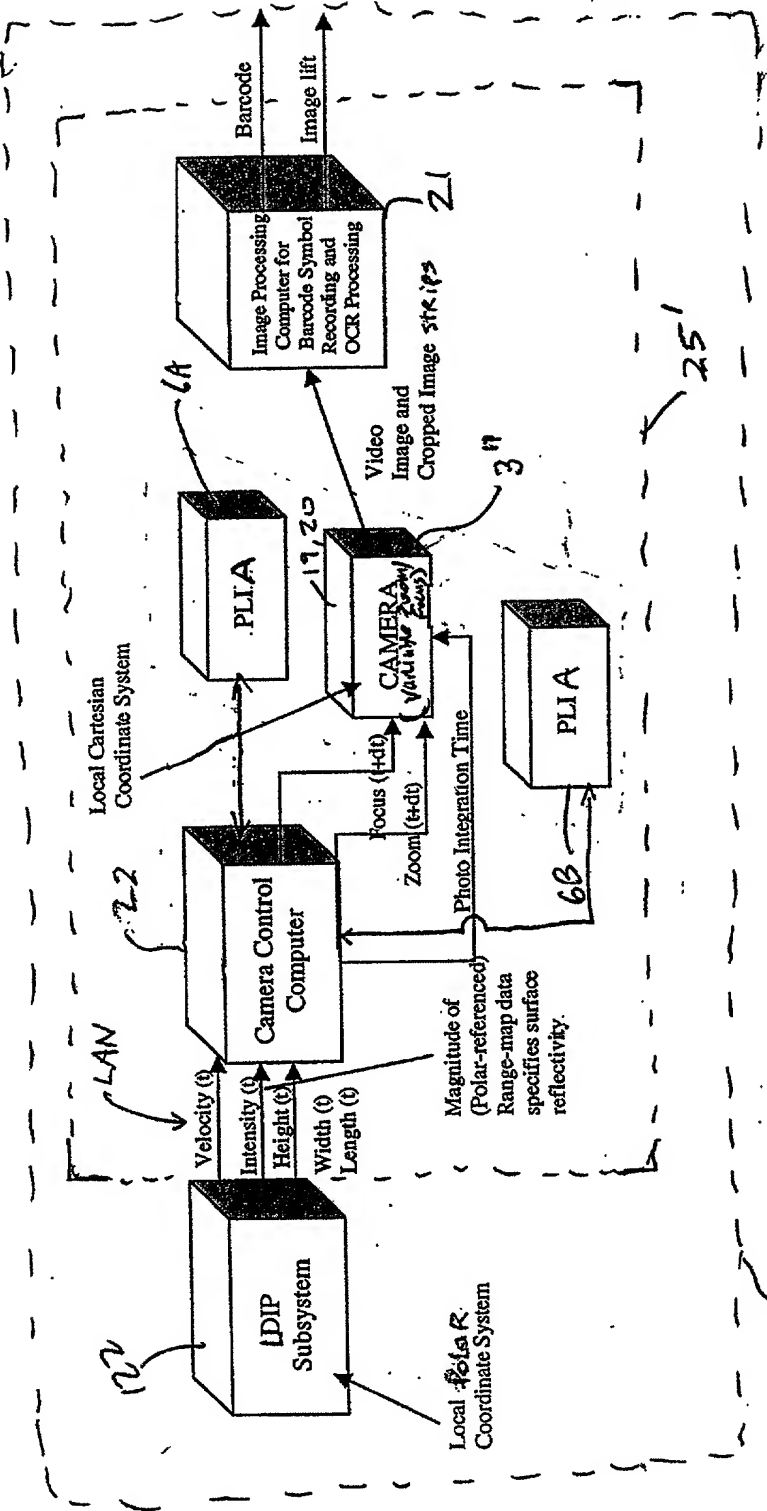


FIG. 11

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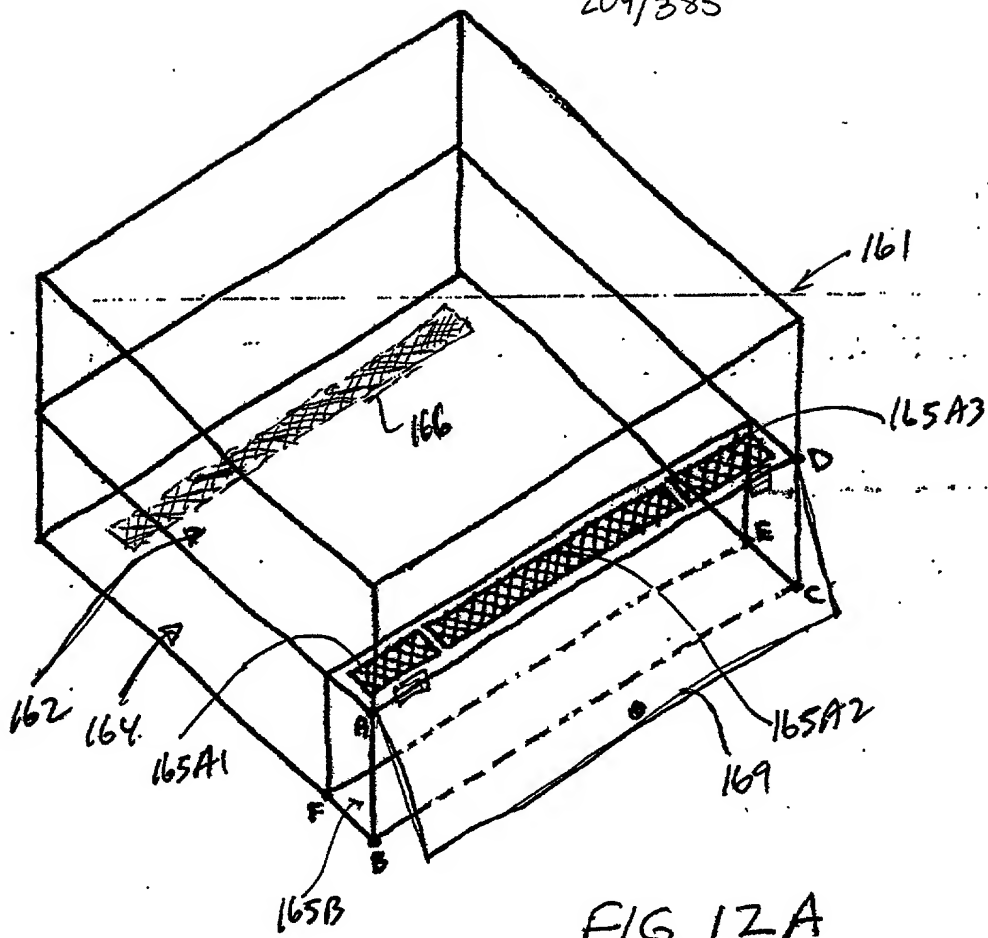


FIG. 12A

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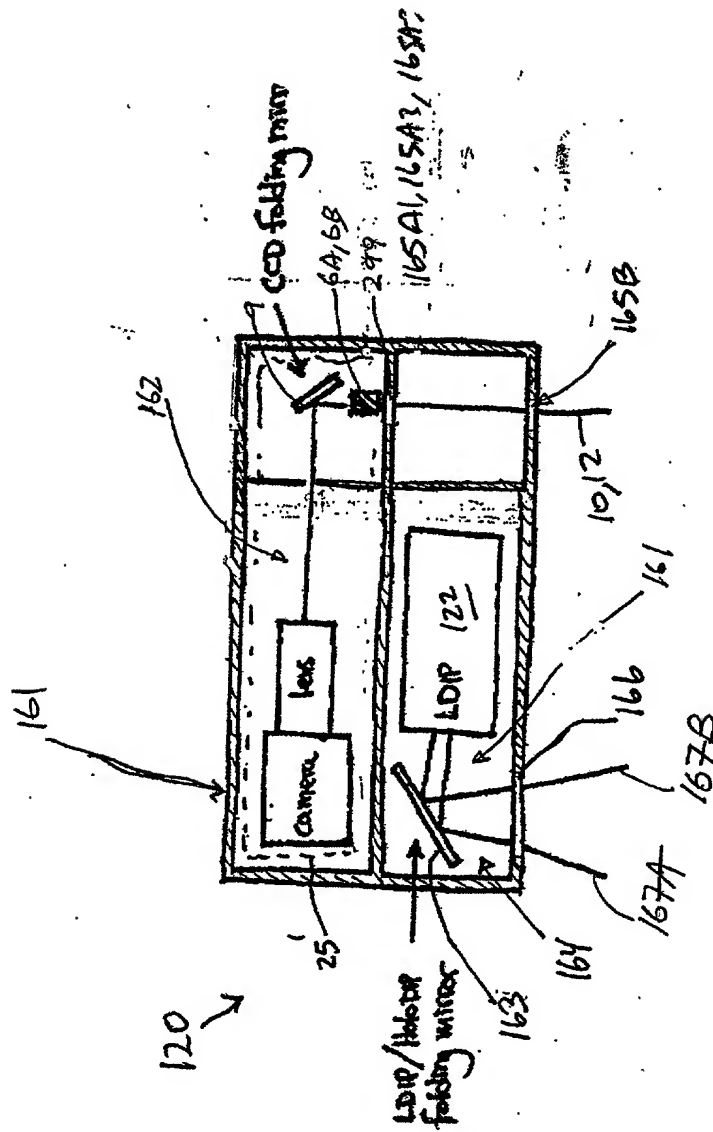


FIG. 12B

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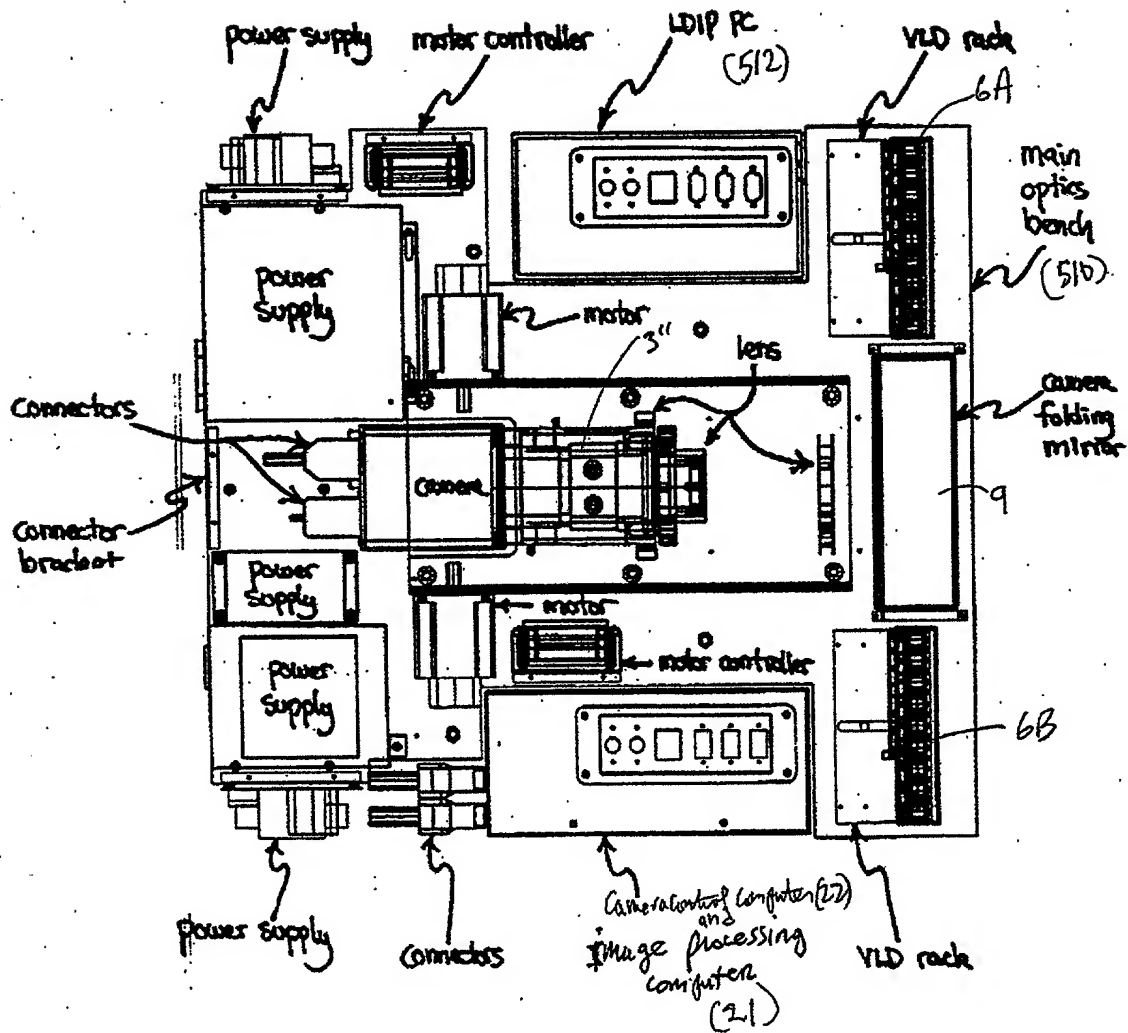


FIG. 12C

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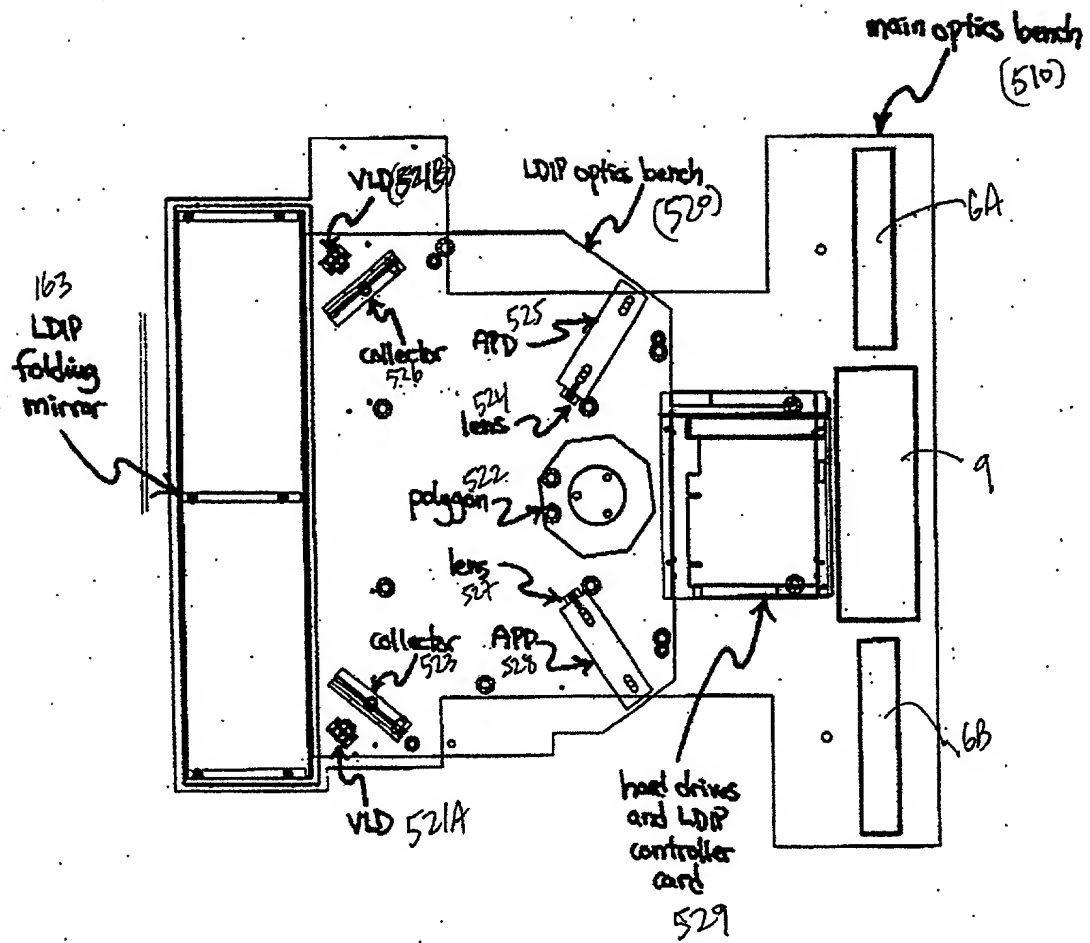
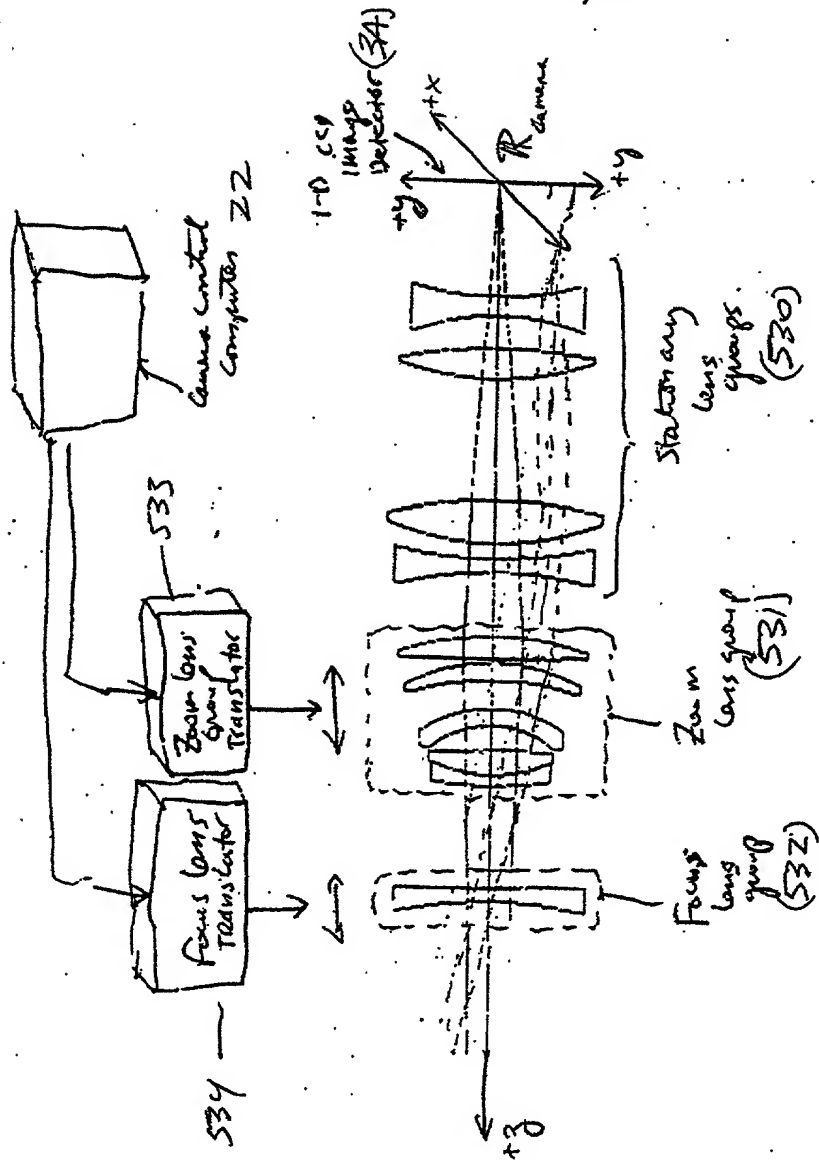


FIG. 12D

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(main optics)
(Lens groups)

FIG. 12E

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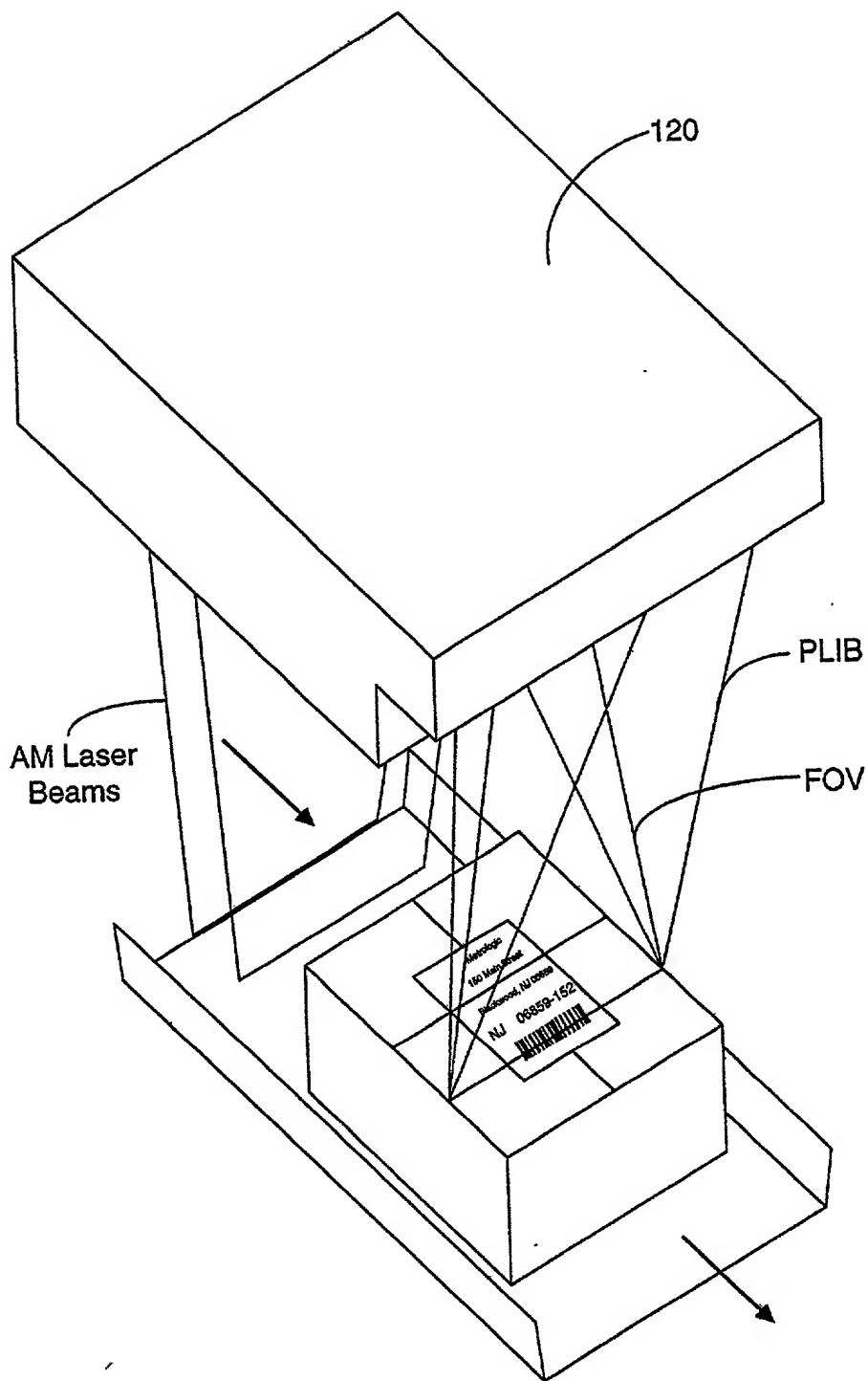


FIG. 13A

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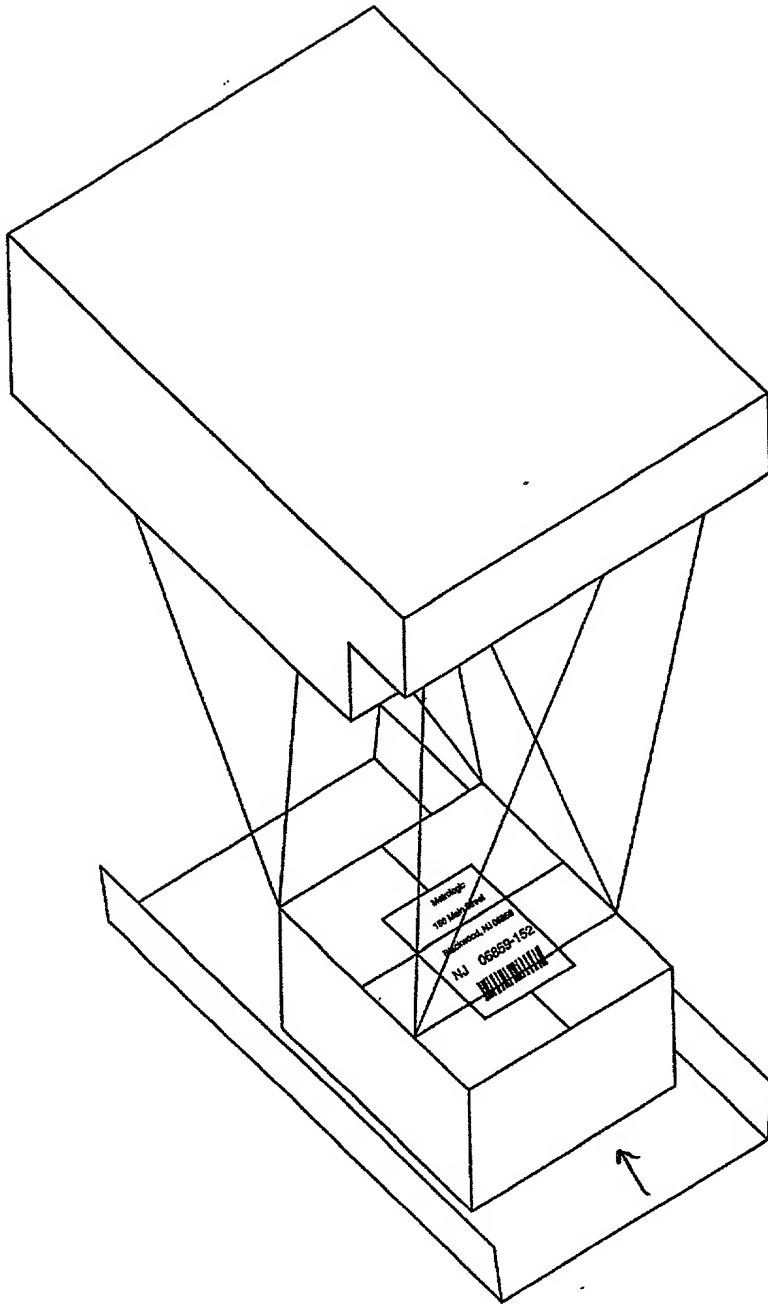


FIG. 13A

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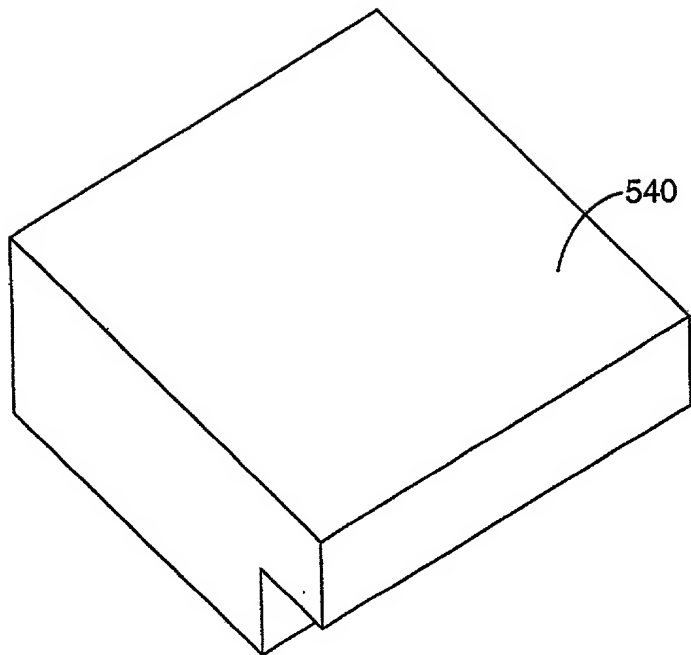


FIG. 13B

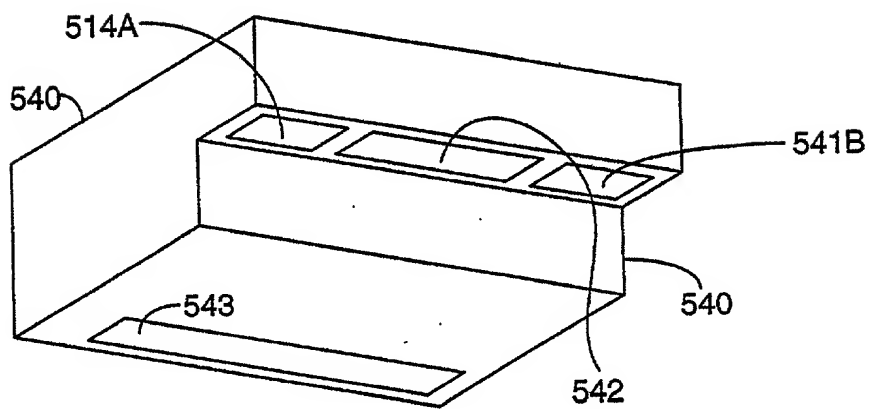


FIG. 13C

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PLLIM-BASED PACKAGE IDENTIFICATION AND DIMENSIONING (PID) SYSTEM

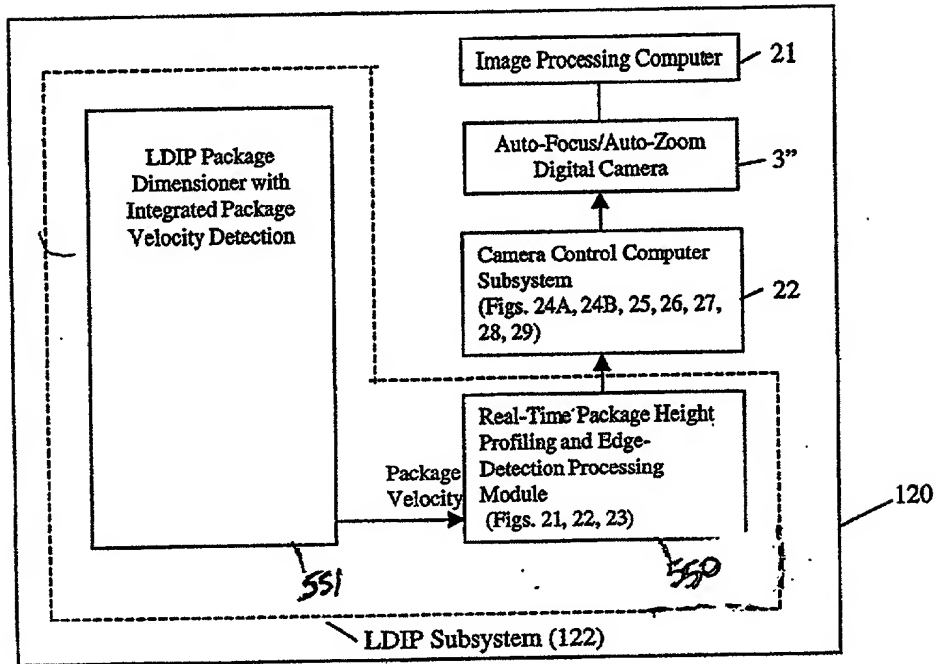


FIG. 14

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LDIP REAL-TIME PACKAGE HEIGHT PROFILE AND EDGE DETECTION METHOD

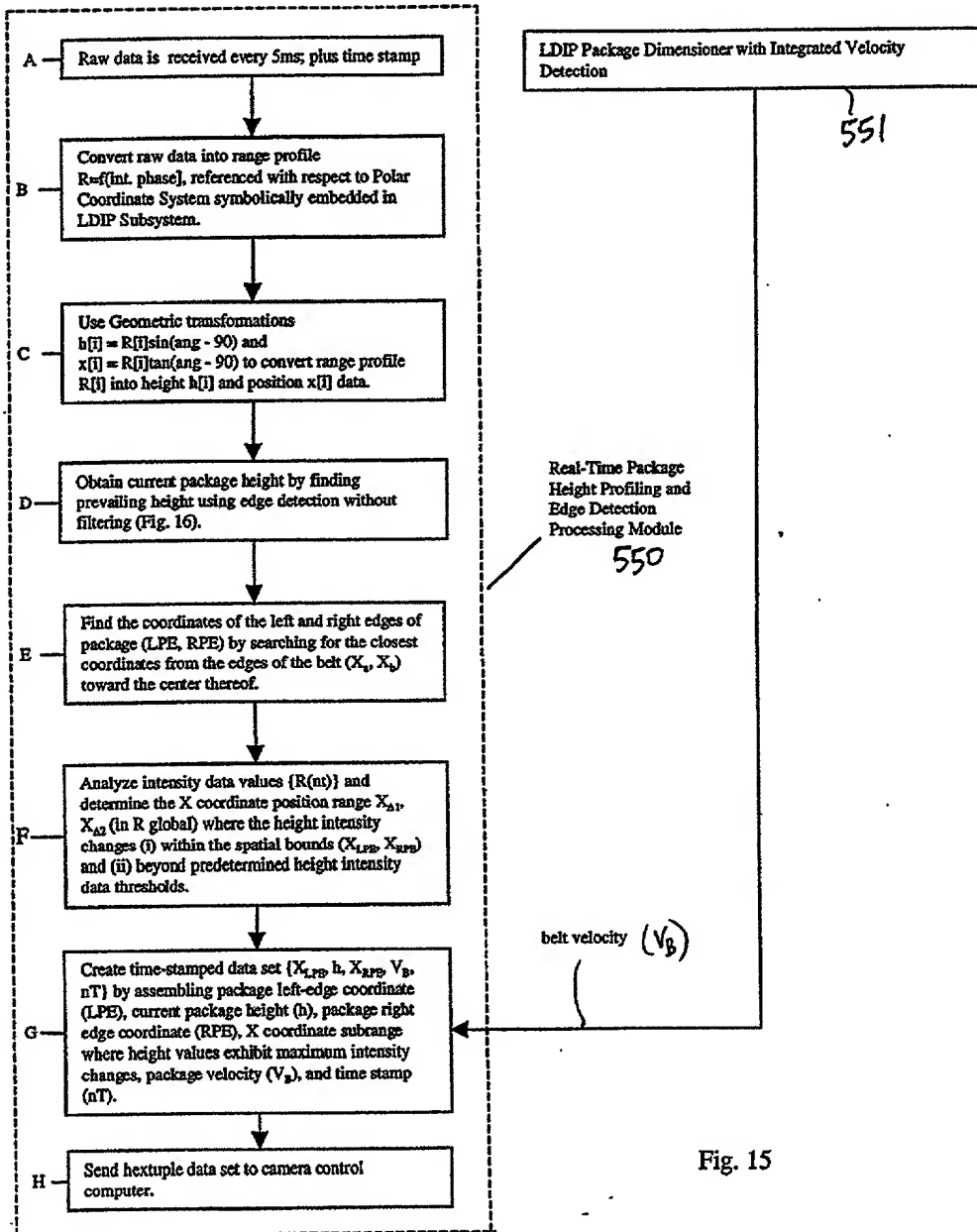
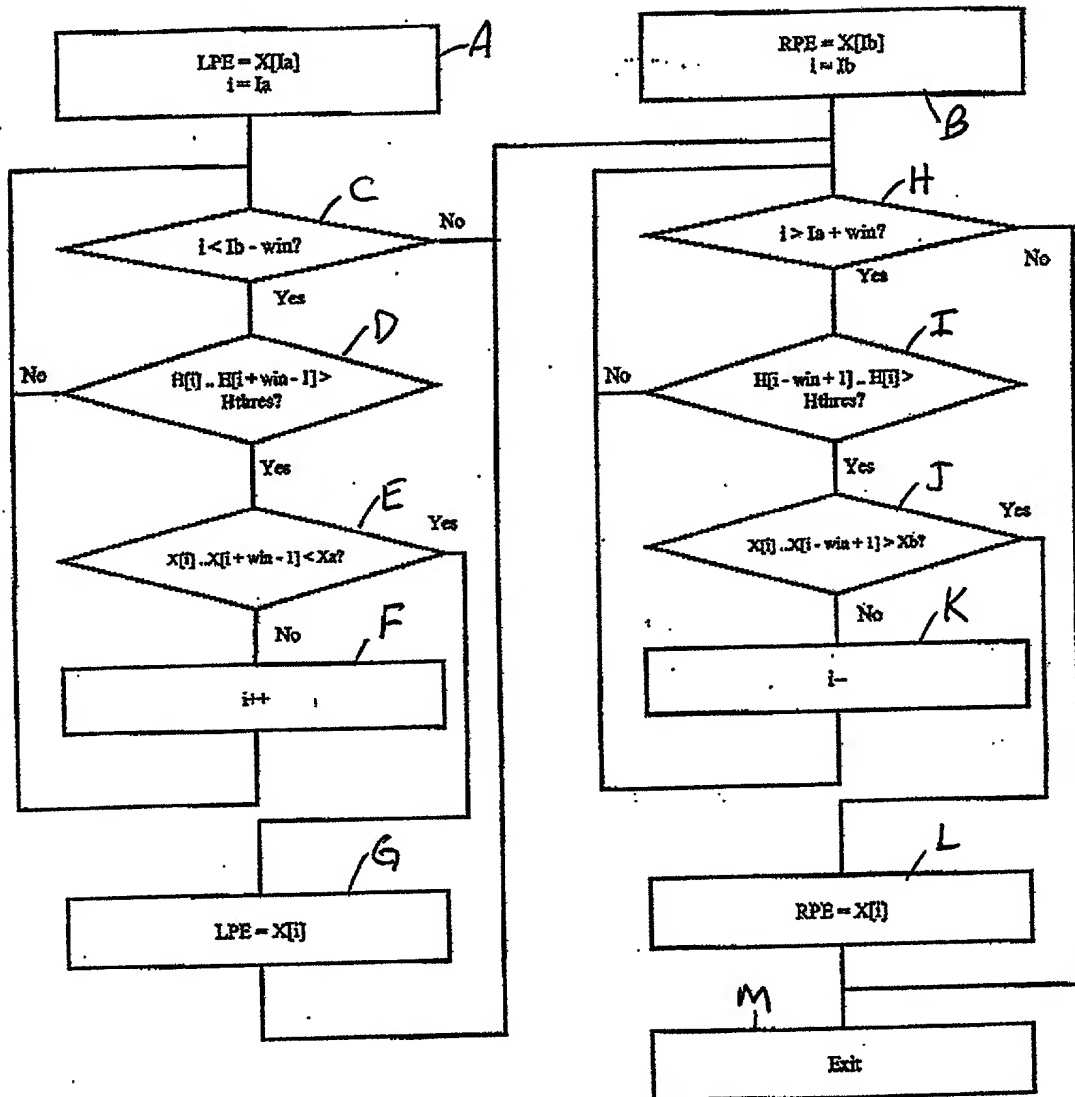


Fig. 15

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LDIP Real Time Package Edge Detection



Xa = location of belt left edge; Xb = location of belt right edge
 Ia = belt edge edge pixel; Ib = belt right edge pixel
 LPE = Left package edge; RPE = Right package edge
 $H[]$ = Pixel height array; $X[]$ = Pixel location array
 win = package detection window

FIG. 16

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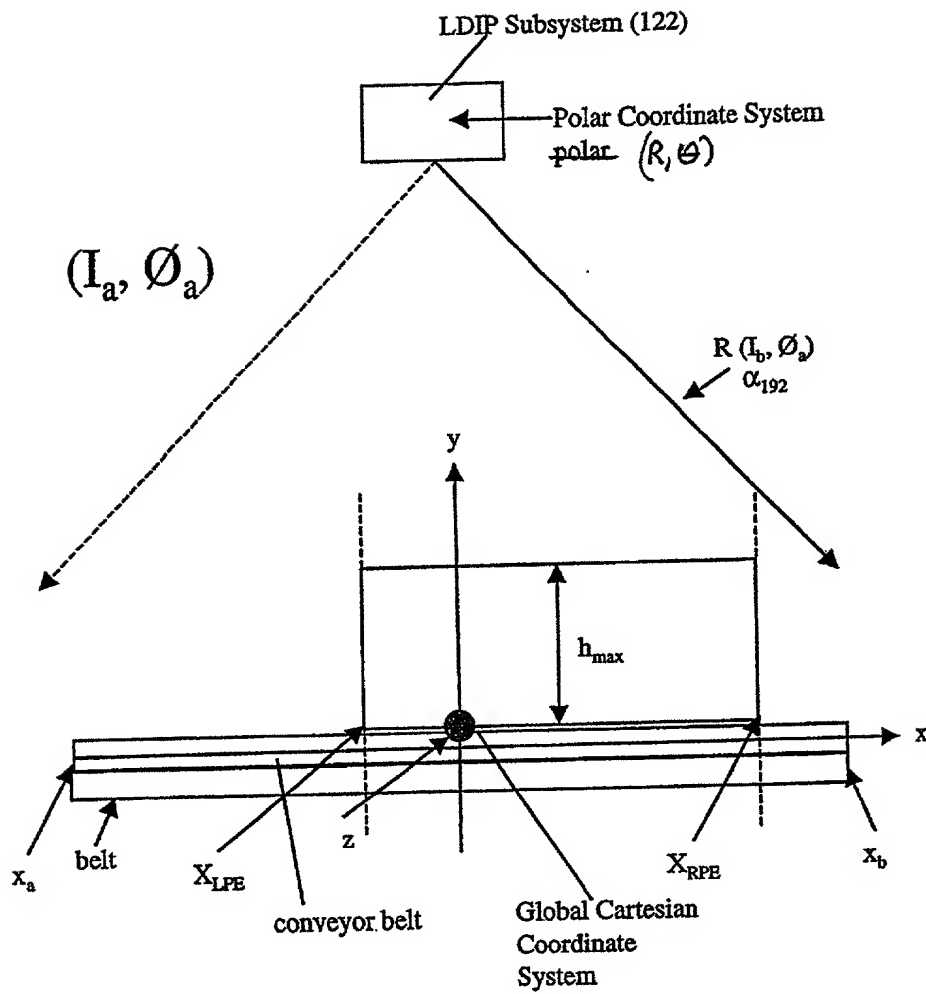


Fig. 17

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INFORMATION MEASURED AT SCAN ANGLES BEFORE COORDINATE TRANSFORMS

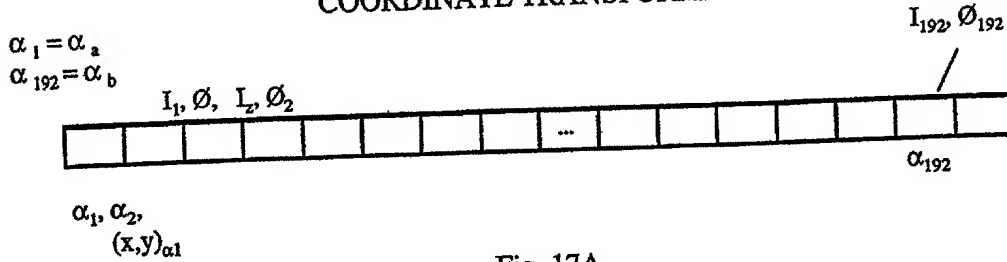


Fig. 17A

RANGE AND POLAR ANGLE MEASURES TAKEN AT SCAN ANGLE α BEFORE COORDINATE TRANSFORMS

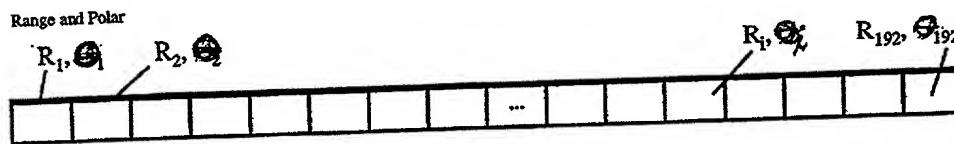


Fig. 17B

MEASURED PACKAGE HEIGHT AND POSITION VALUES AFTER COORDINATE TRANSFORMS

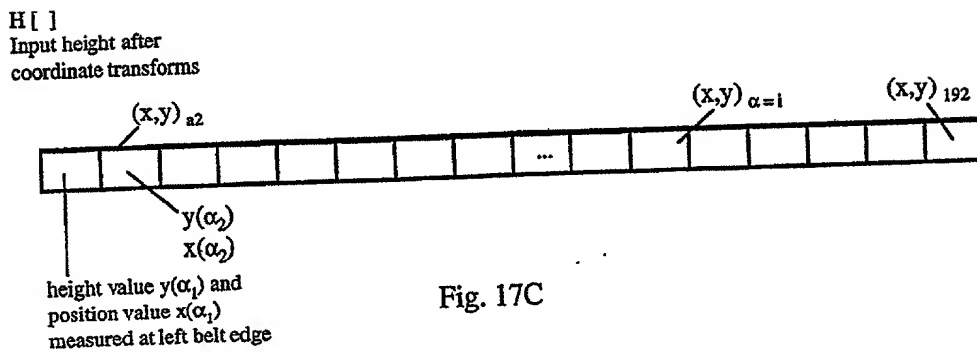
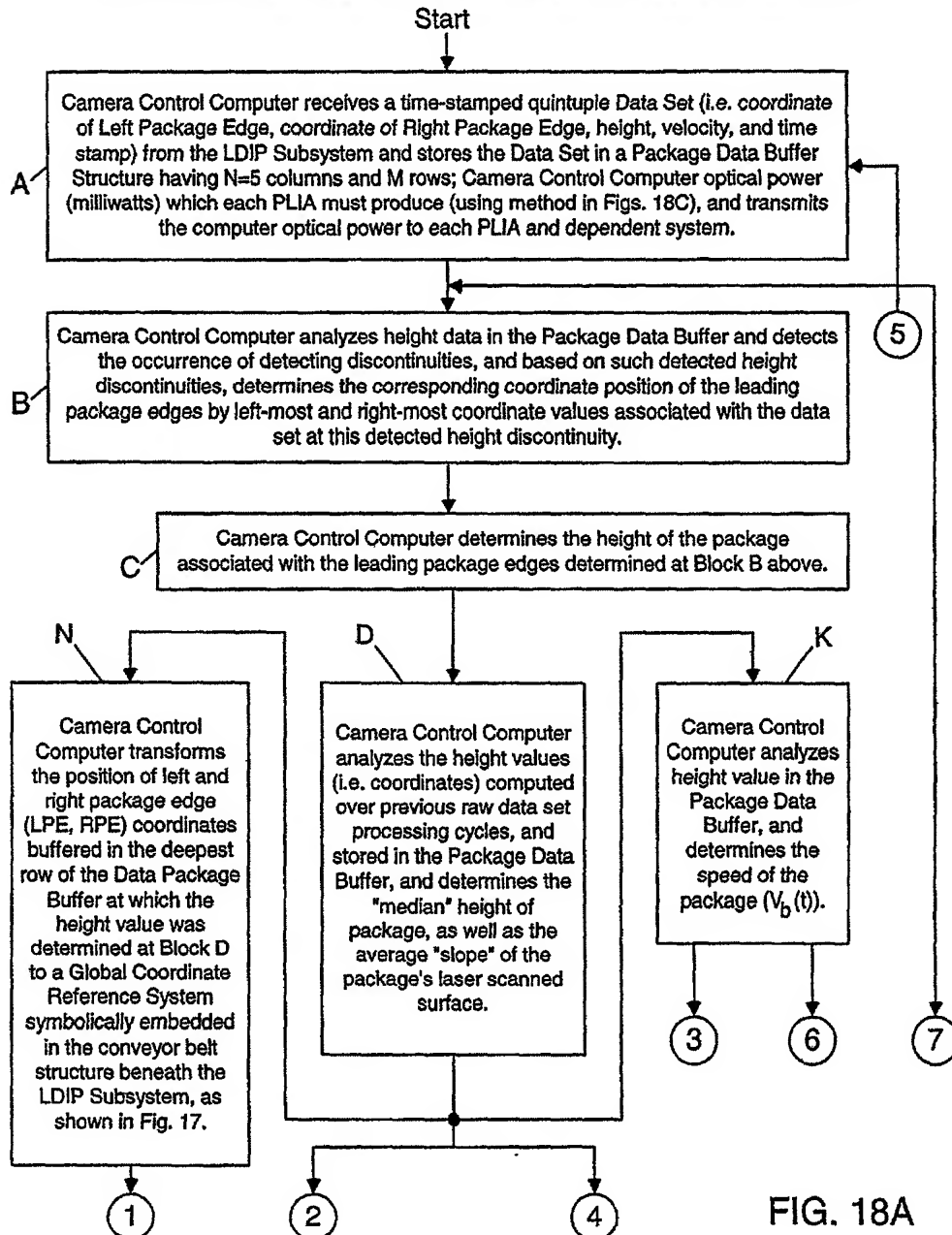


Fig. 17C

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CAMERA CONTROL PROCESS CARRIED OUT WITHIN THE CAMERA
CONTROL SUBSYSTEM OF EACH OBJECT IDENTIFICATION AND
ATTRIBUTE ACQUISITION SYSTEM OF PRESENT INVENTION



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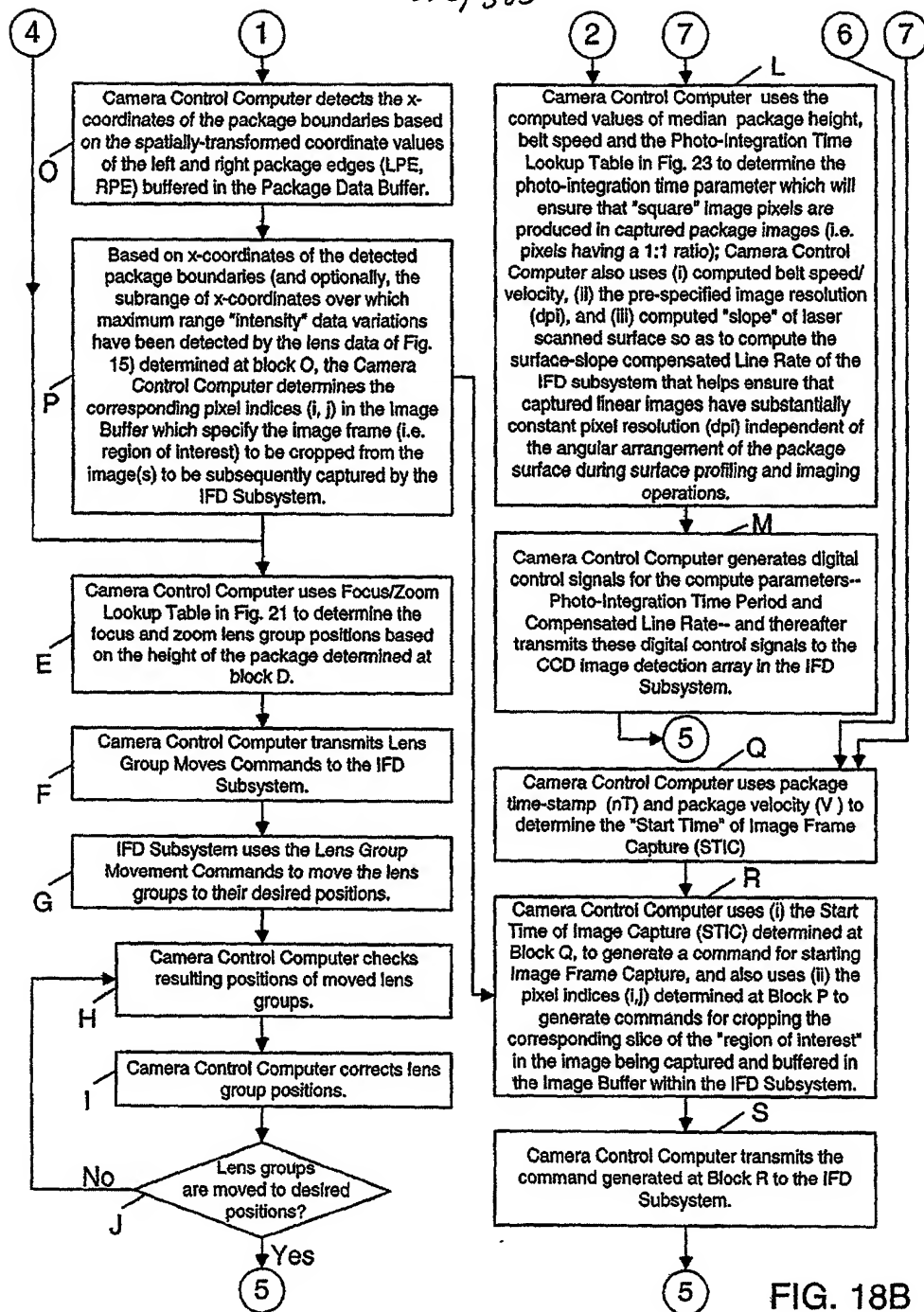


FIG. 18B

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METHOD OF COMPUTING OPTICAL OUTPUT POWER FROM CASE
DIODES IN PLANAR LASER ILLUMINATION ARRAY (PLIA) FOR
CONTROLLING CONSTANT WHITE LEVEL IN IMAGE PIXELS CAPTURED
BY PLIIM-BASED LINEAR IMAGER

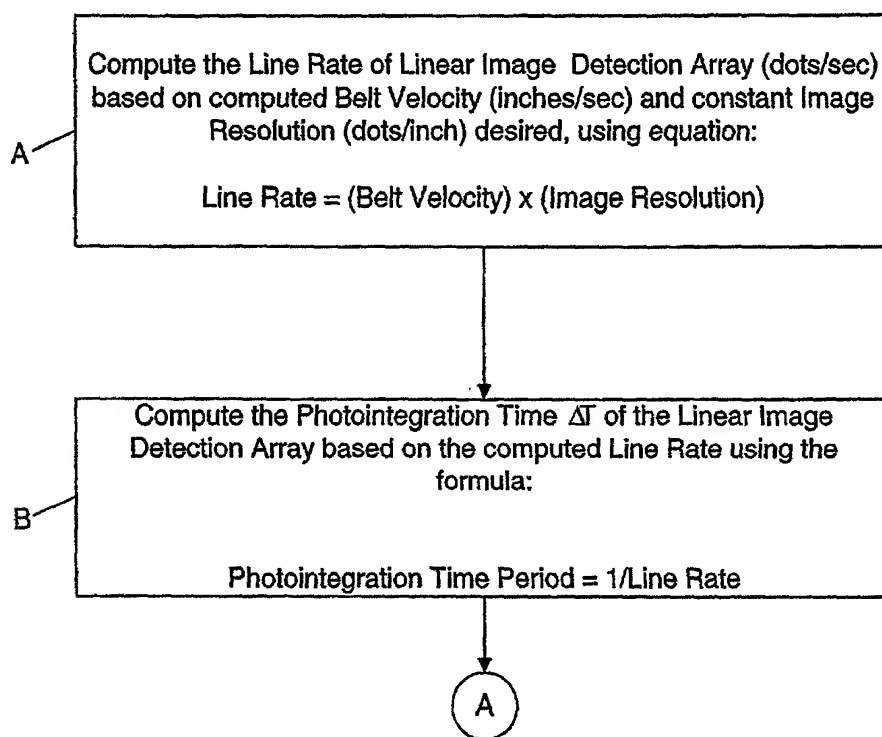


FIG. 18C1

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A



Compute the Optical Power (milliwatts) of each PLIA based on computed Photointegration Time Period (ΔT) using the following formula:

$$\text{Optical Power of VLD (milliwatts)} = \frac{\text{constant}}{\text{Photointegration Time Period } \Delta T}$$

FIG. 18C2

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METHOD OF COMPUTING COMPENSATED LINE RATE FOR CORRECTING
VIEWING-ANGLE DISTORTION OCCURING IN IMAGES OF OBJECT
SURFACES CAPTURED AS OBJECT SURFACES MOVE PAST PLIM-
BASED LINEAR IMAGER AT NON-ZERO SKEWED ANGLE

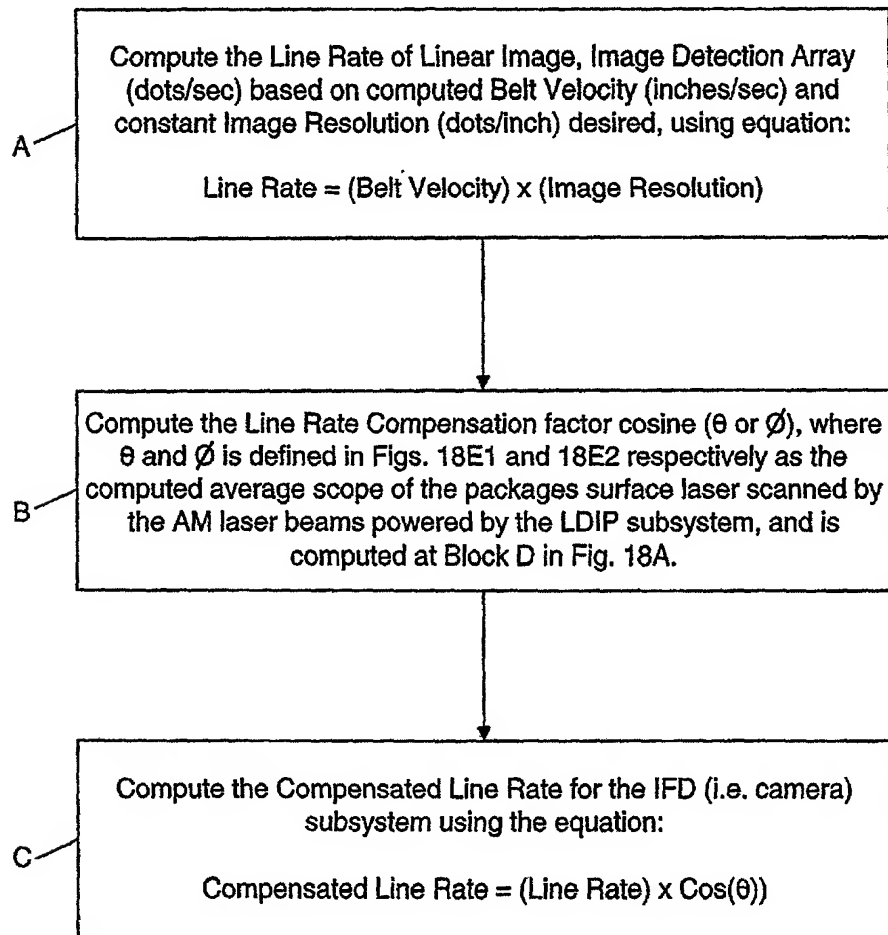


FIG. 18D

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CASE 1:
Top Down Imaging

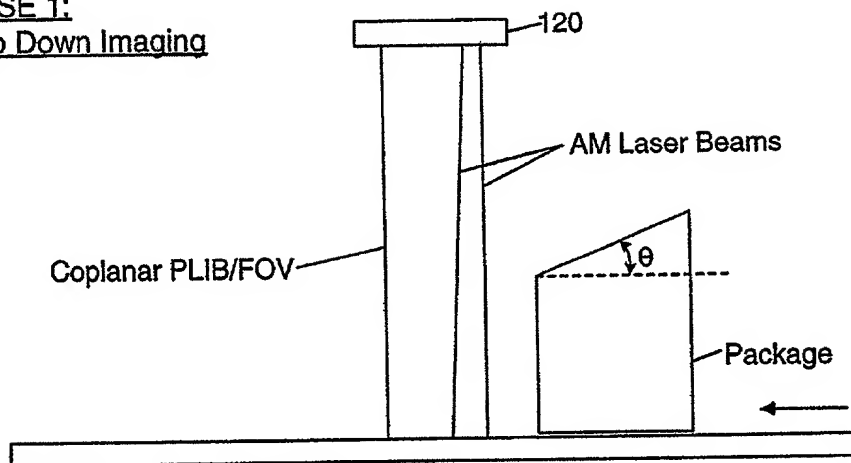


FIG. 18E1

CASE 2:
Side Imaging

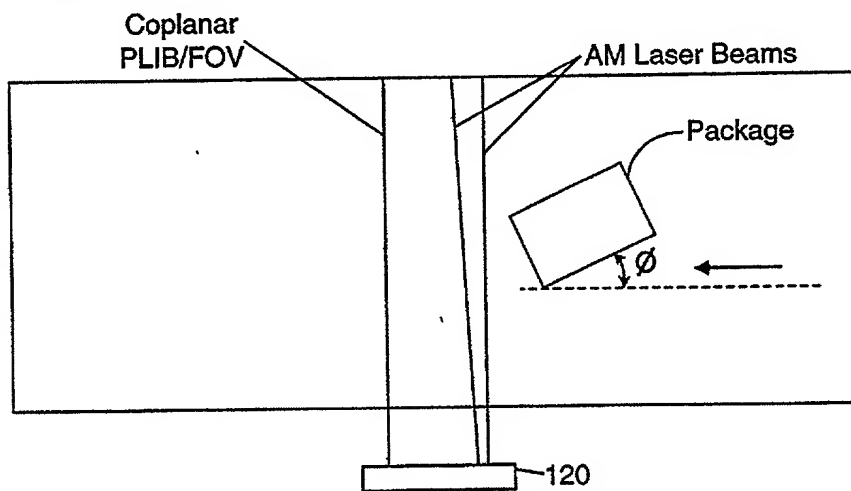


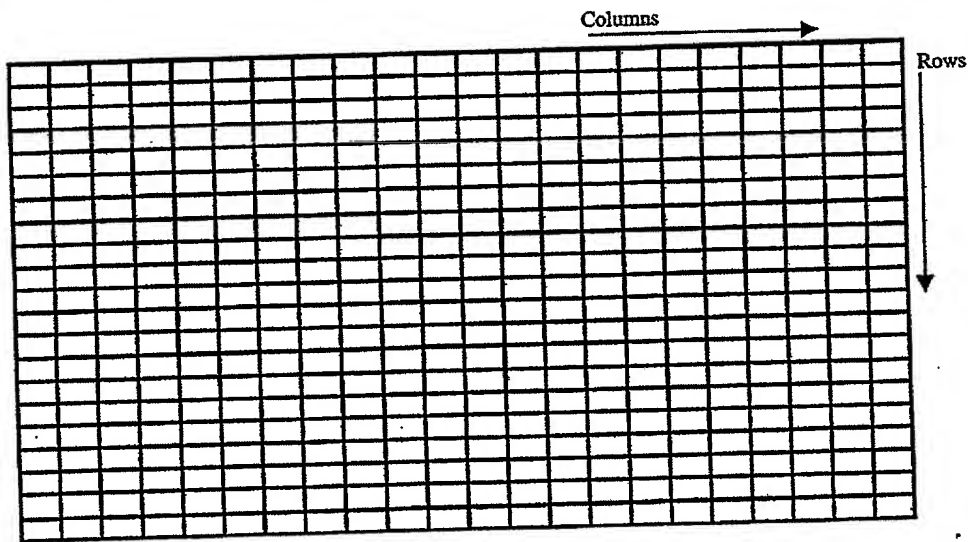
FIG. 18E2

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X coordinate subrange where
maximum range "intensity"
variations have been detected

Left Package Edge (LDE)	Package Height (h)	Right Package Edge (RPE)	Package Velocity	Time-stamp (nT)	
					Row 1
					Row 2
					Row 3
					Row 4
					Row 5
					Row M
Package Data Buffer (FIFO)					

Fig. 19



Camera Pixel Data Buffer
pixel indices (i,j)

Fig. 20

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Zoom and Focus Lens Group Position
Look-up Table

Distance from Camera H (mm)	Zoom group distance (mm) Y (Zoom)	Focus group distance (mm) Y (Focus)
1000	21.57489228	2.47E-05
1100	19.38089696	10.99009783
1200	17.10673434	20.65783177
1300	14.77137314	29.10917002
1400	12.39153565	36.47312595
1500	9.979114358	42.87845436
1600	7.540639114	48.44003358
1700	5.078794775	53.25495831
1800	2.595989366	57.40834303
1900	0.099972739	60.98883615

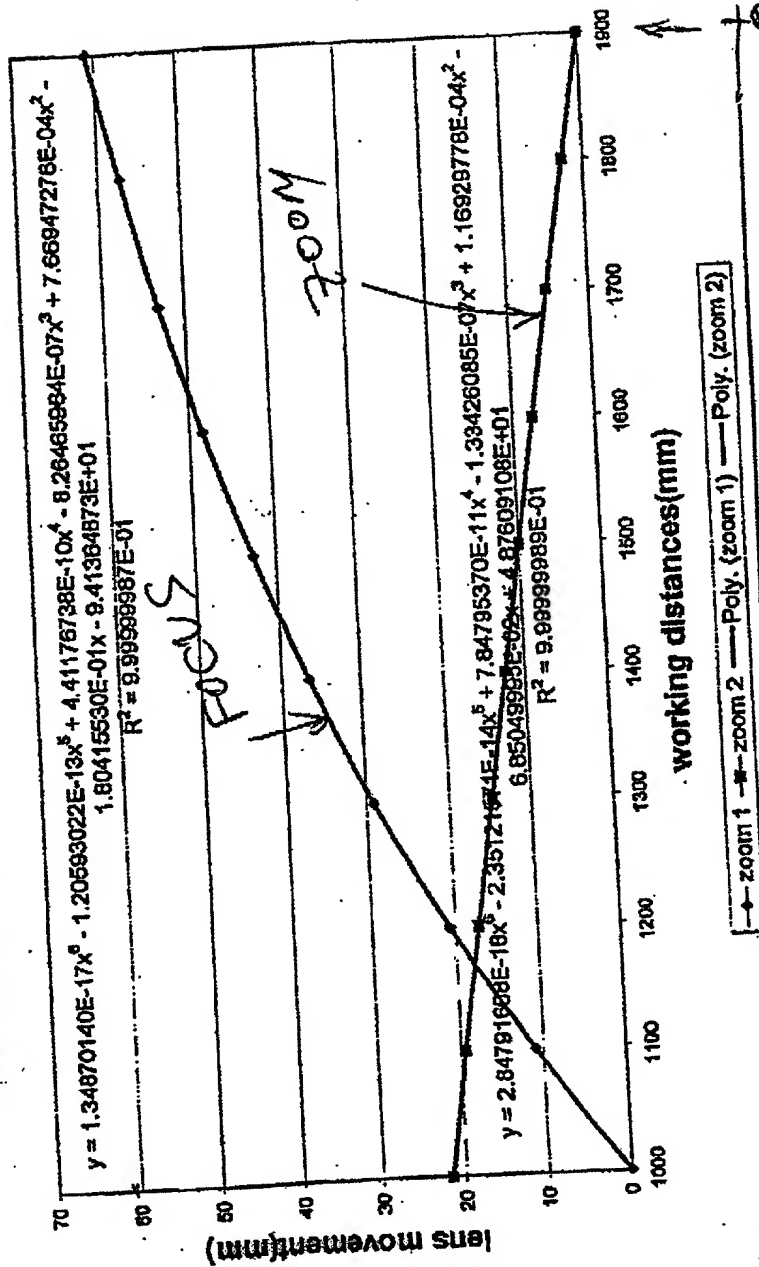
(use
interpolation
techniques
for walking
distances
between listed
points in
table)

FIG. 21.

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* Note: On feed distance & zoom (eff. focal length) in camera lens are coupled (interdependent) in this camera has a fixed aperture F5.6

Focus and Zoom lens movement vs. working distances



conveyor-belt surface

← package height above conveyor

↑ (inches) 36 above conveyor belt

FIG. 22A

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Photo-Integration Time Look-Up Table

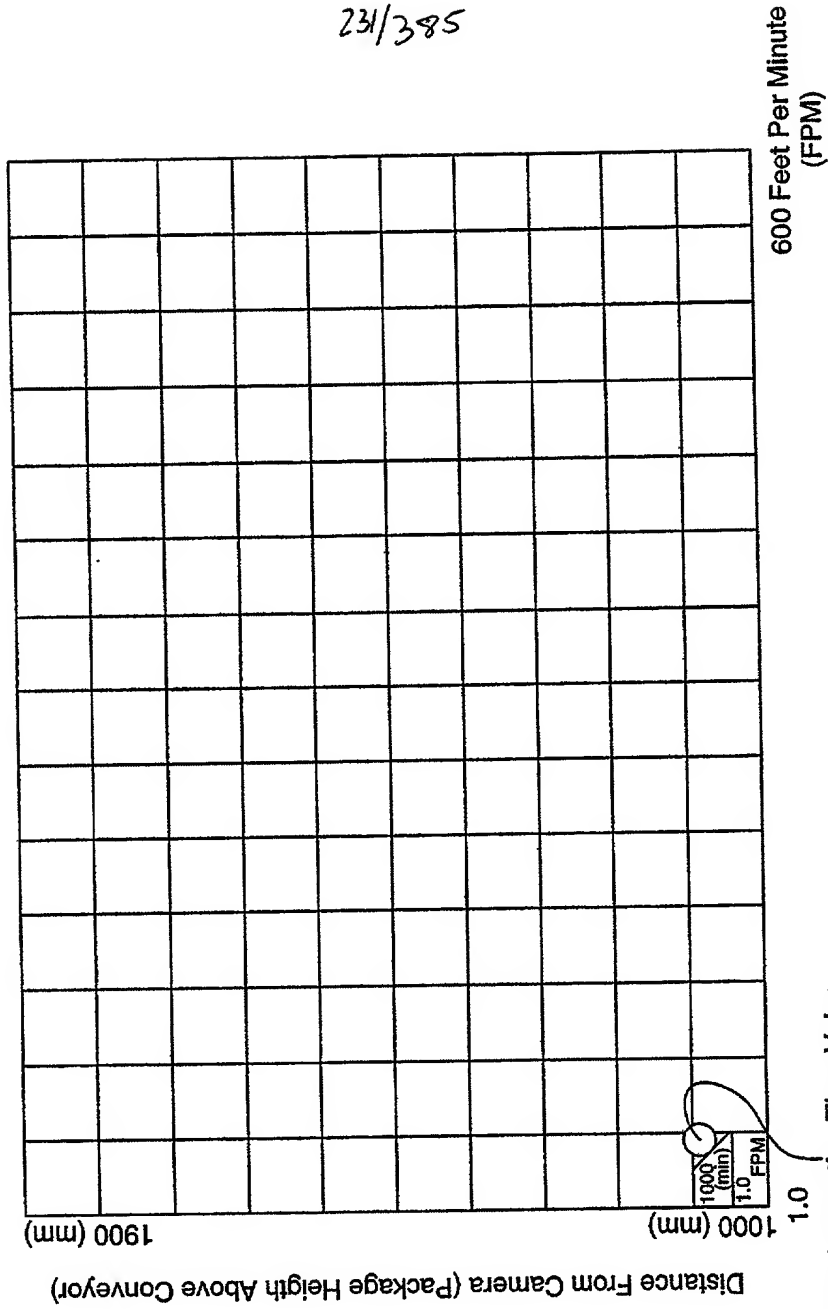


FIG. 22B

3D Surface Profile And High Resolution Linear Image Data Capture At PLIIM-Based Profiling And Imaging System

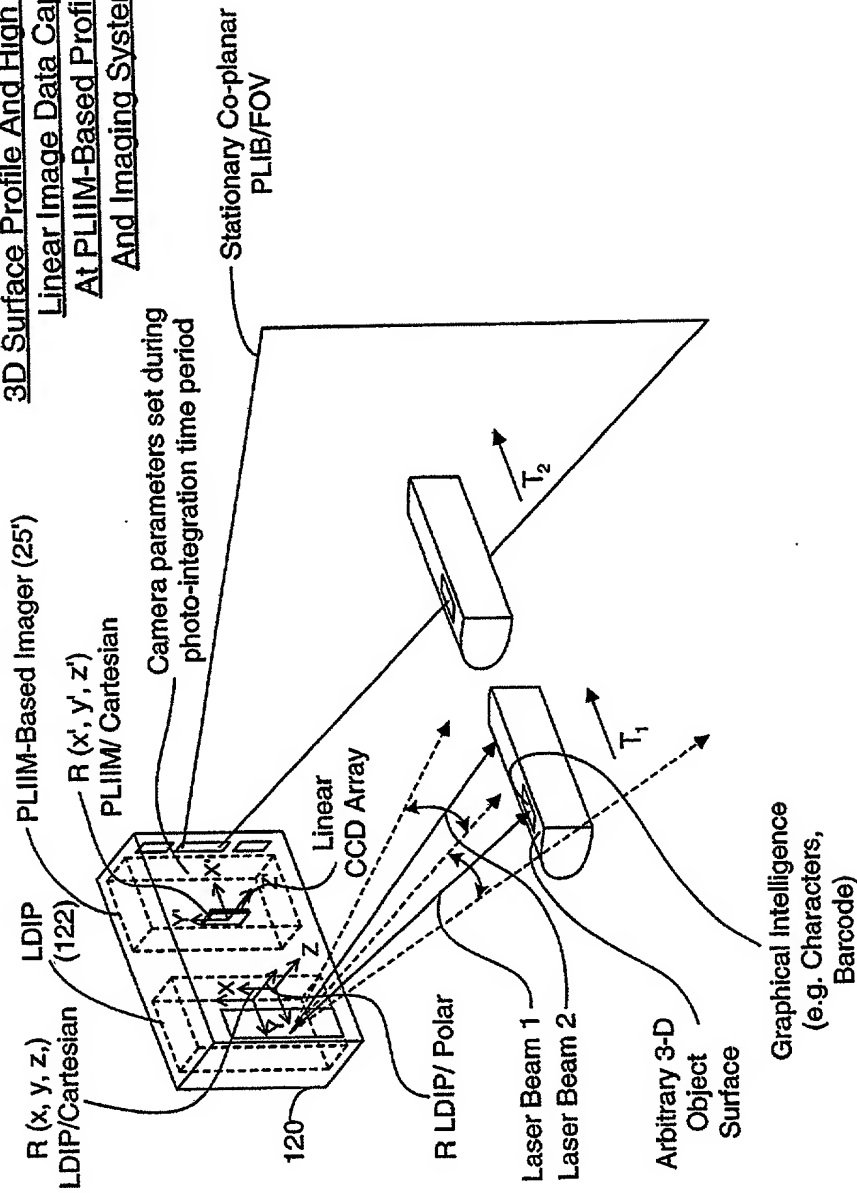


FIG. 23A

Geometrical Modelling Of Arbitrary 3-D Object Surface At Image Processing Computer

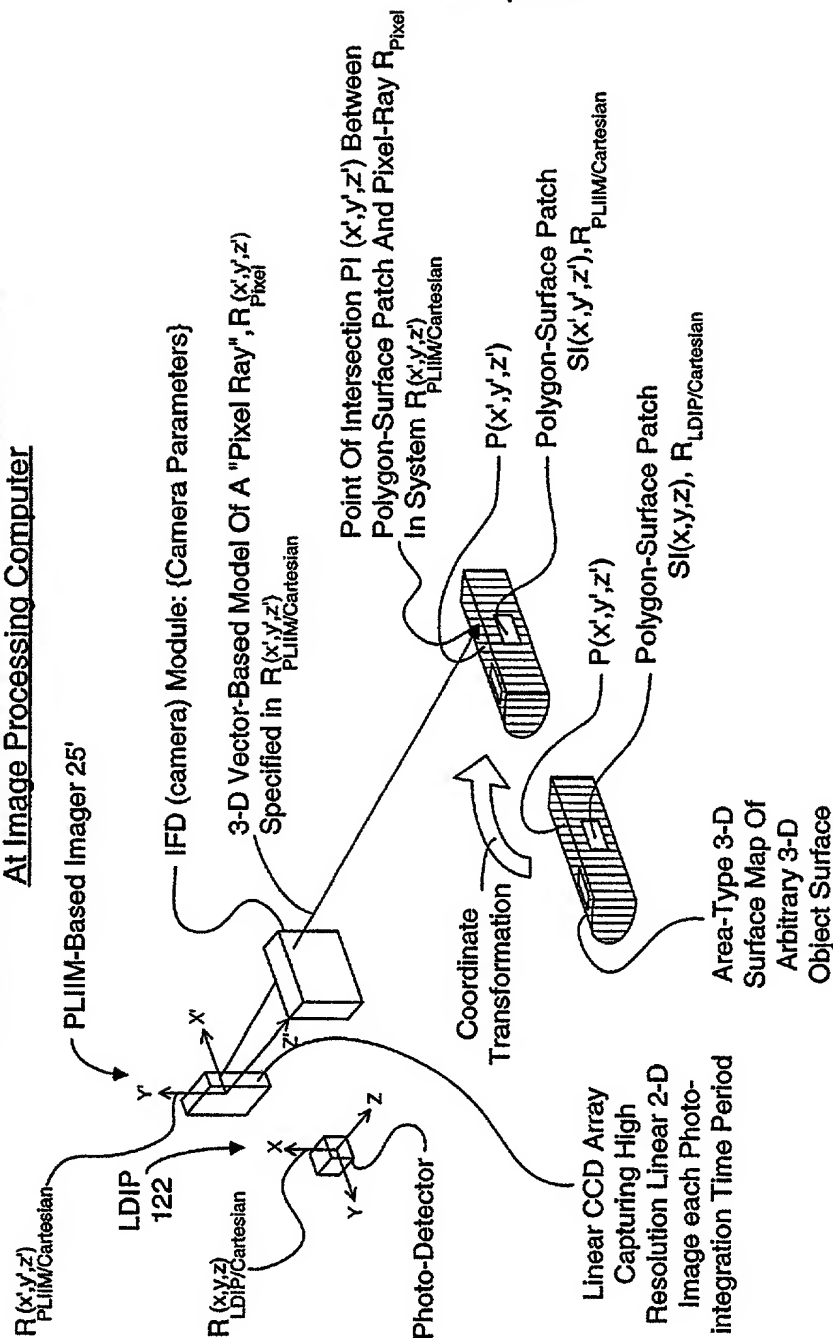


FIG. 23B

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METHOD OF AND APPARATUS FOR PERFORMING AUTOMATIC
RECOGNITION OF GRAPHICAL INTELLIGENCE CONTAINED IN 2-D
IMAGES CAPTURED FROM ARBITRARY 3-D OBJECT SURFACES

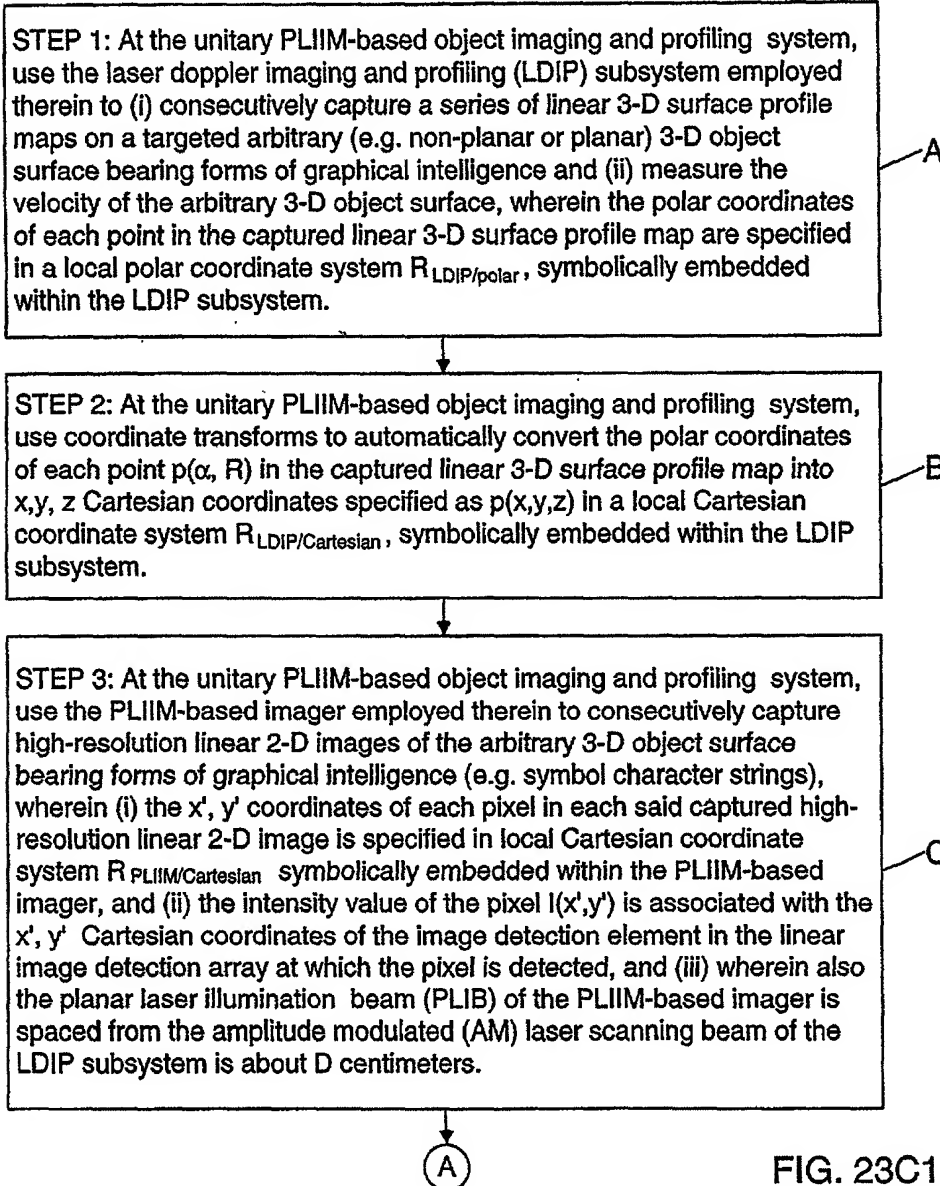


FIG. 23C1

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A

STEP 4: At the unitary PLIIM-based object imaging and profiling system, capture and buffer the camera (IFD) parameters used to form and detect each linear high-resolution 2-D image captured during the corresponding photo-integration time period ΔT_K , by the PLIIM-based imager.

D

STEP 5: At the end of each photo-integration time period ΔT_K , use the unitary PLIIM-based object imaging and profiling system to transmit the following information elements to the Image Processing Computer for data storage and subsequent information processing:

- (1) the converted coordinates x, y, z , of each point in the linear 3-D surface profile map of the arbitrary 3-D object surface captured during photo-integration time period ΔT_K ;
- (2) the measured velocity(ies) of the arbitrary 3-D object surface during photo-integration time period ΔT_K ;
- (3) the x', y' coordinates and intensity value $I(x', y')$ of each pixel in each high-resolution linear 2-D image captured during photo-integration time period ΔT_K and specified in the local Cartesian coordinate system $R_{PLIIM/Cartesian}$; and
- (4) the captured camera (IFD) parameters used to form and detect each linear high-resolution 2-D image captured during the photo-integration time period ΔT_K

E

STEP 6: At the Image Processing Computer, receive the data elements transmitted from the PLIIM-based profiling and imaging system during Step 5, buffer data elements (1) and (2) in a first FIFO buffer memory structure, and data elements (3) and (4) in a second FIFO buffer memory structure.

F

B

FIG. 23C2

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(B)

STEP 7: At the Image Processing Computer, use the x, y, z coordinates associated with a consecutively captured series of linear 3-D surface profile maps (i.e. stored in first FIFO memory storage structure) in order to construct a 3-D polygon-mesh surface representation of said arbitrary 3-D object surface, represented by $S_{LDIP}(x, y, z)$ and having (i) vertices specified by x, y, z in local coordinate reference system $R_{PLIIM/Carthesian}$, and (ii) planar polygon surface patches $s_i(x, y, z)$ and being defined by a set of said vertices.

G

STEP 8: At the Image Processing Computer, convert the x', y', z' coordinates of each vertex in the 3-D polygon-mesh surface representation into the local Cartesian coordinate reference system $R_{PLIIM/Carthesian}$ symbolically embedded within the PLIIM-based imager.

H

STEP 9: At the Image Processing Computer, specify the x', y', z' coordinates of each i -th planar polygon surface patch $s(x, y, z)$ represented in the local Cartesian coordinate reference system $R_{PLIIM/Carthesian}$, so as to produce a set of corresponding polygon surface patch $\{s_i(x', y', z')\}$ represented in system $R_{PLIIM/Carthesian}$

I

STEP 10: At the Image Processing Computer, for a selected linear high-resolution 2-D image captured at photo-integration time period ΔT_K , and spatially corresponding to one of the linear 3-D surface profile maps employed at Step 7, use the camera (IFD) parameters used and recorded (i.e. captured) during the corresponding photo-integration time period in order to construct a 3-D vector-based "pixel ray" model specifying the optical formation of each pixel in the linear 2-D image, wherein a pixel ray reflected off a point on the arbitrary 3-D object surface is focused through the camera's image formation optics (i.e. configured by the camera parameters) and is detected at the pixel's detection element in the linear image detection array of the IFD (camera) subsystem.

J

(C)

FIG. 23C3

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(C)

STEP 11: At the Image Processing Computer, for each laser beam ray (producing one of the pixels in said selected linear 2-D image), (i) determine which polygon surface patch $s_i(x, y, z)$ the pixel ray intersects, (ii) compute the x, y, z coordinates of the point of intersection (POI) between the pixel ray and the polygon surface patch represented in Cartesian coordinate reference system $R_{PLIIM/Carthesian}$, and (iii) designate the computed set of points of intersection as $\{p_i(x, y, z)\}$.

K

STEP 12: At the Image Processing Computer, for each laser beam ray passing through a determined polygon surface patch $s(x', y', z')$ at a computed point of intersection $p_i(x, y, z)$, assign the intensity value $I(x', y')$ of the pixel ray to the x', y', z' coordinates of the point of intersection, thereby producing a linear high-resolution 3-D image comprising a 2-D array of pixels, each said pixel having as its attributes (i) an Intensity value $I(x', y', z')$ and (ii) coordinates x', y', z' specified in the local Cartesian coordinate reference system $R_{PLIIM/Carthesian}$.

L

STEP 13: Put the computed linear high-resolution 3-D image in a third FIFO memory storage structure in the image processing computer.

M

STEP 14: Repeat Steps 1-6 to update the first and second FIFO data queues maintained in the image processing computer, and Steps 7-13 to update the consecutively computed linear high-resolution 3-D image stored in the third FIFO memory storage structure.

N

STEP 15: Assemble in an image buffer in the image processing computer, a set of consecutively computed linear high-resolution 3-D images retrieved from the third FIFO data storage device so as to construct an "area-type" high-resolution 3-D image of said arbitrary 3-D object surface.

O

(D)

FIG. 23C4

(D)

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STEP 16: At the Image Processing Computer, map the intensity value $I(x', y', z')$ of each pixel in the computed area-type 3-D image onto the x', y', z' coordinates of the points on a uniformly-spaced apart "grid" positioned perpendicular to the optical axis of the camera subsystem (i.e. to model the 2-D planar substrate on which the forms of graphical intelligence was originally rendered), wherein said mapping process involves using an intensity weighing function based on the x', y', z' coordinate values of each pixel in the area-type high-resolution 3-D image, thereby producing an area-type high-resolution 2-D image of the 2-D planar substrate surface bearing said forms of graphical intelligence (e.g. symbol character strings).

P

STEP 17: At the Image Processing Computer, use said OCR algorithm to perform automated recognition of graphical intelligence contained in said area-type high-resolution 2-D image of said 2-D planar substrate surface so as to recognize said graphical intelligence and generate symbolic knowledge structures representative thereof.

Q

STEP 18: Repeat Steps 1-17 as often as required to recognize changes in graphical intelligence on the arbitrary moving 3-D object surface.

R

FIG. 23C5

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Photo-Integration Time Look-up Table

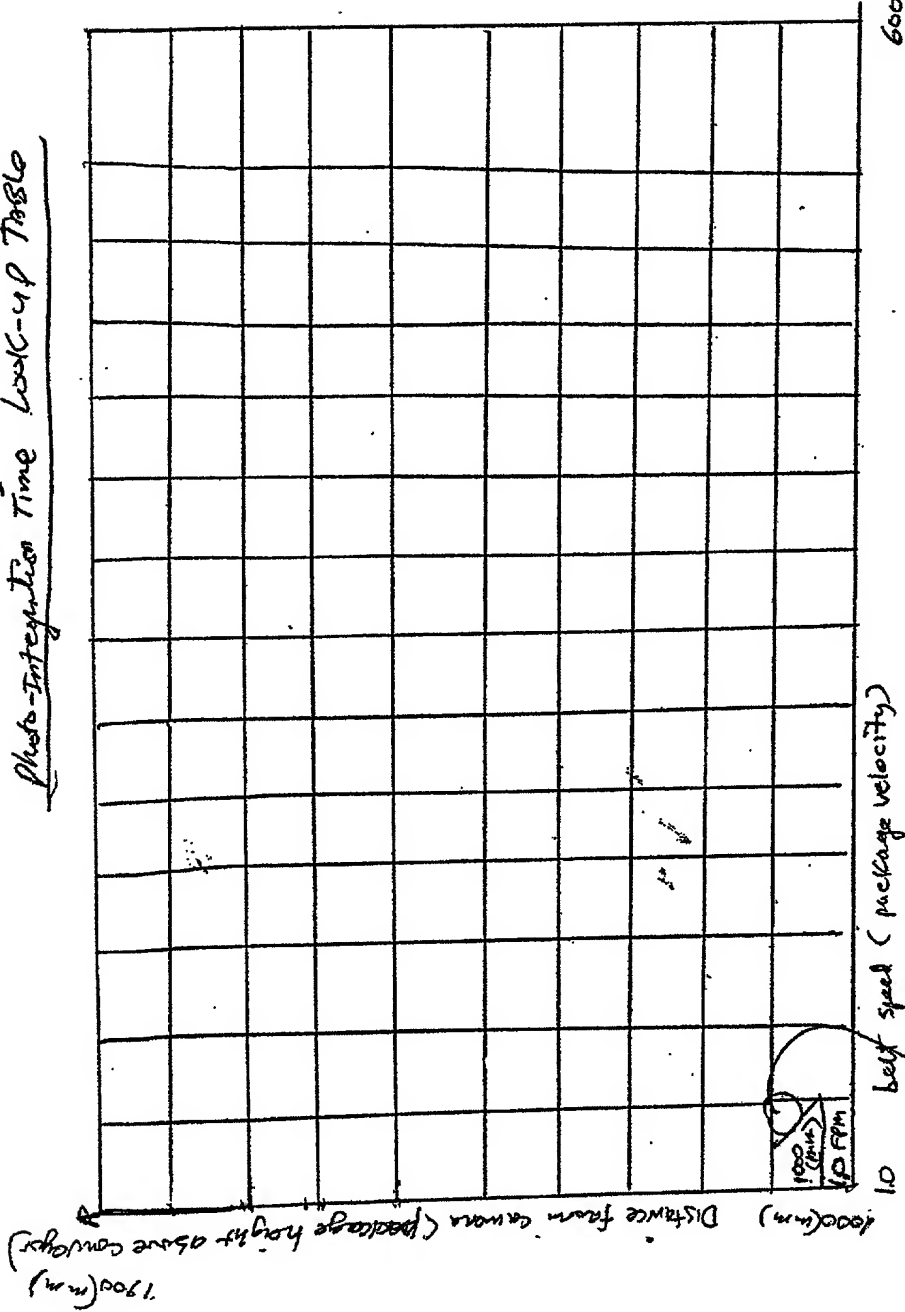


FIG. 22B

Photo-integration time value that ensures square image pixels (1:1 aspect ratio)

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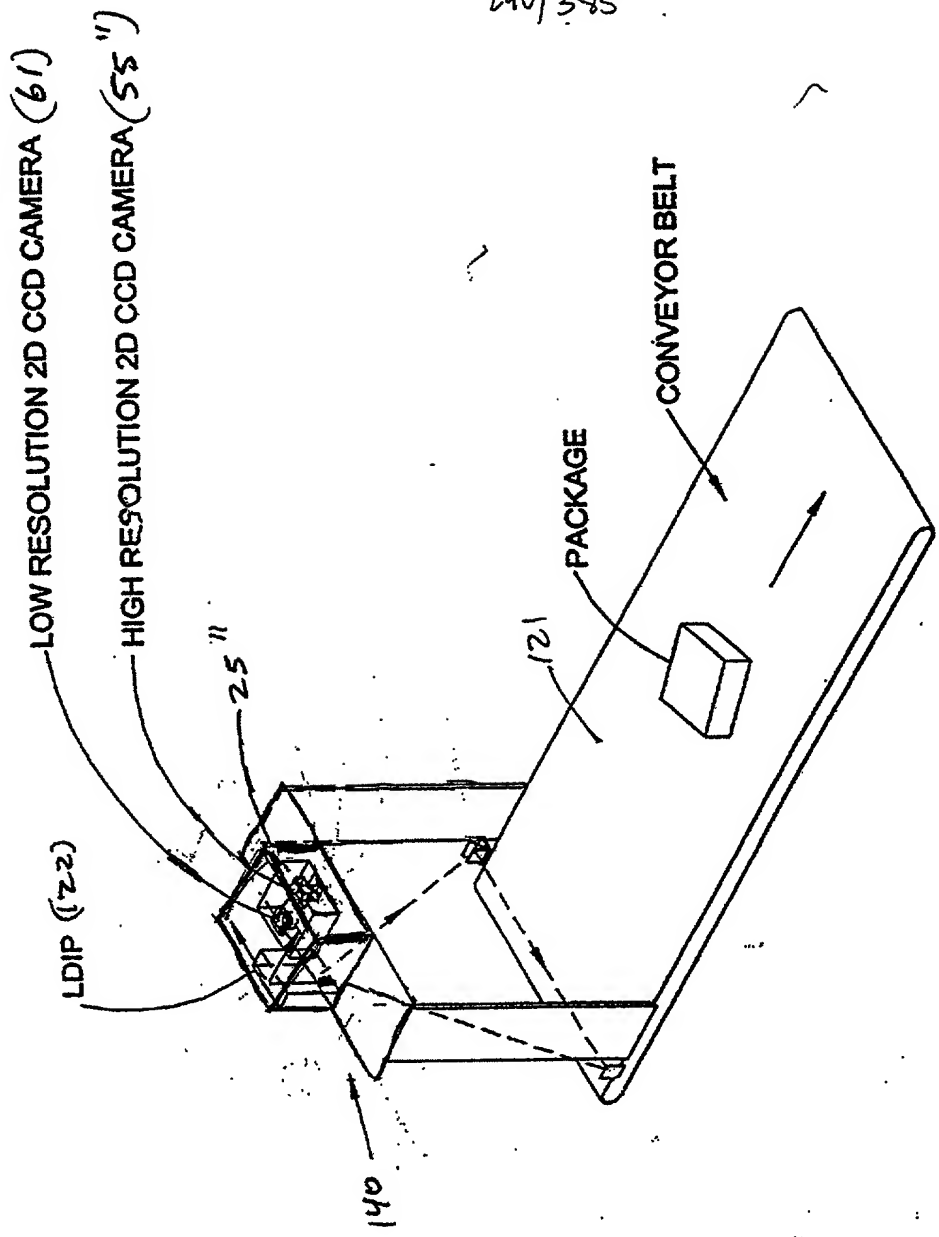
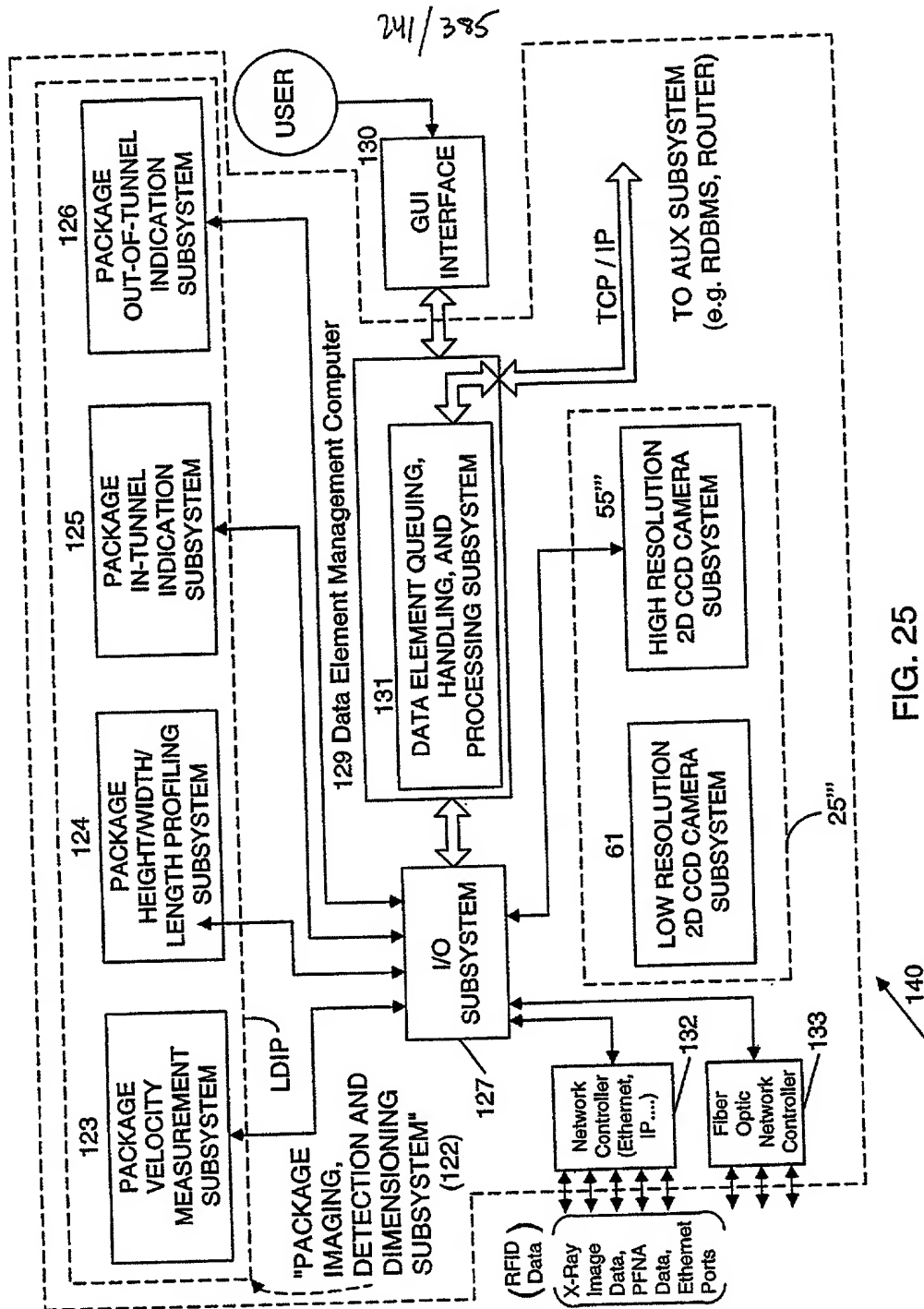


FIG 24



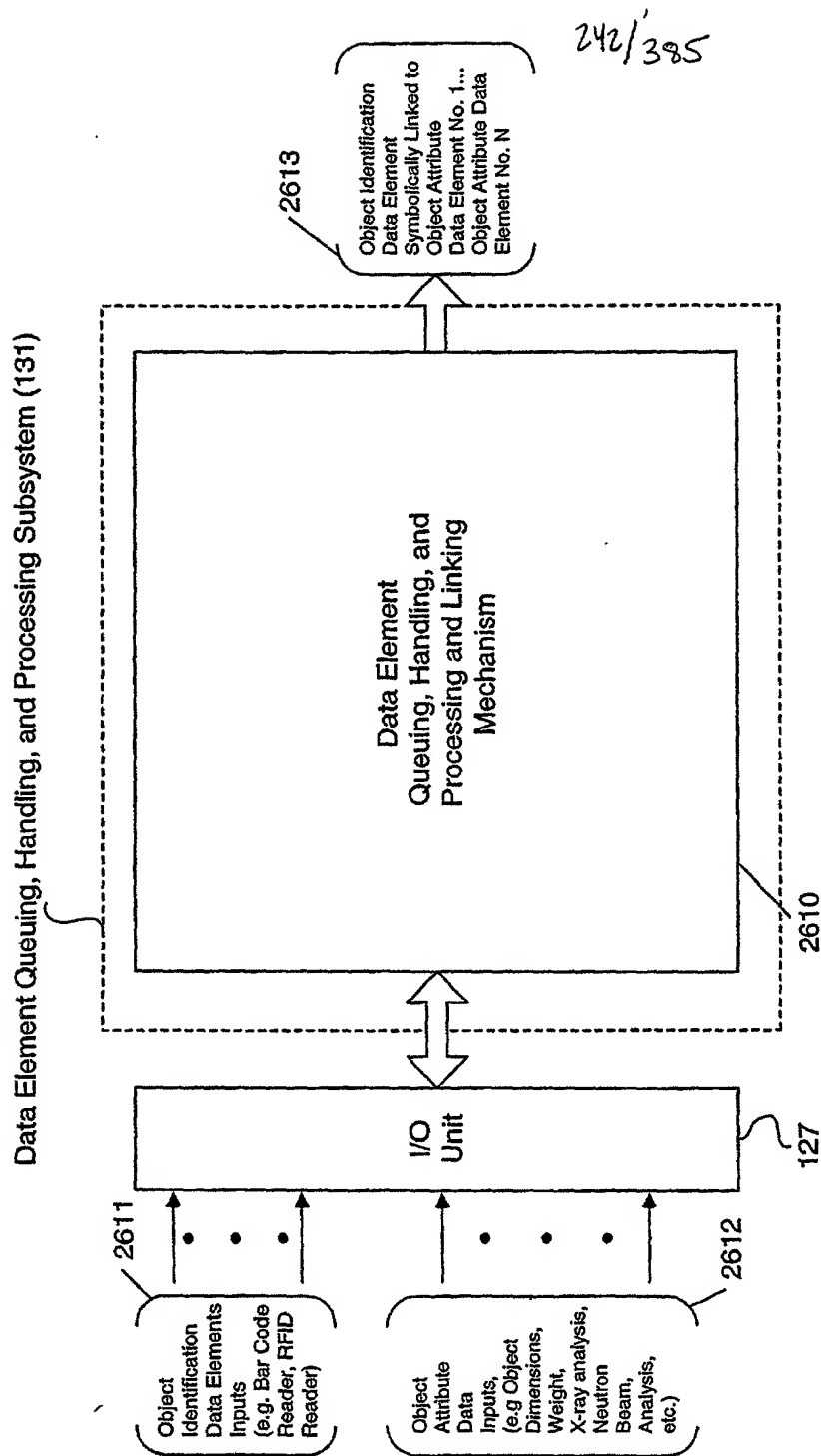


FIG. 25A

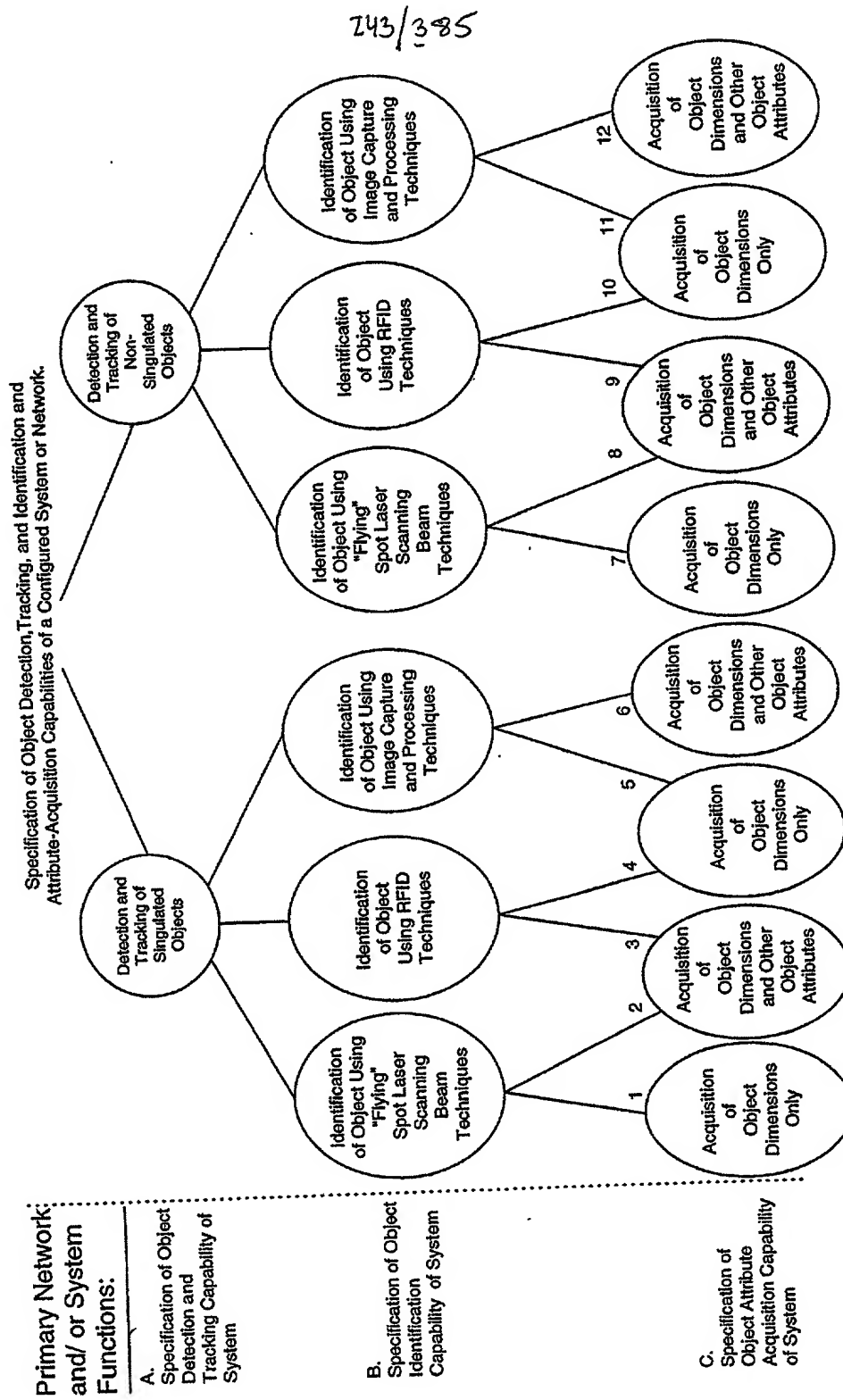


FIG. 25B

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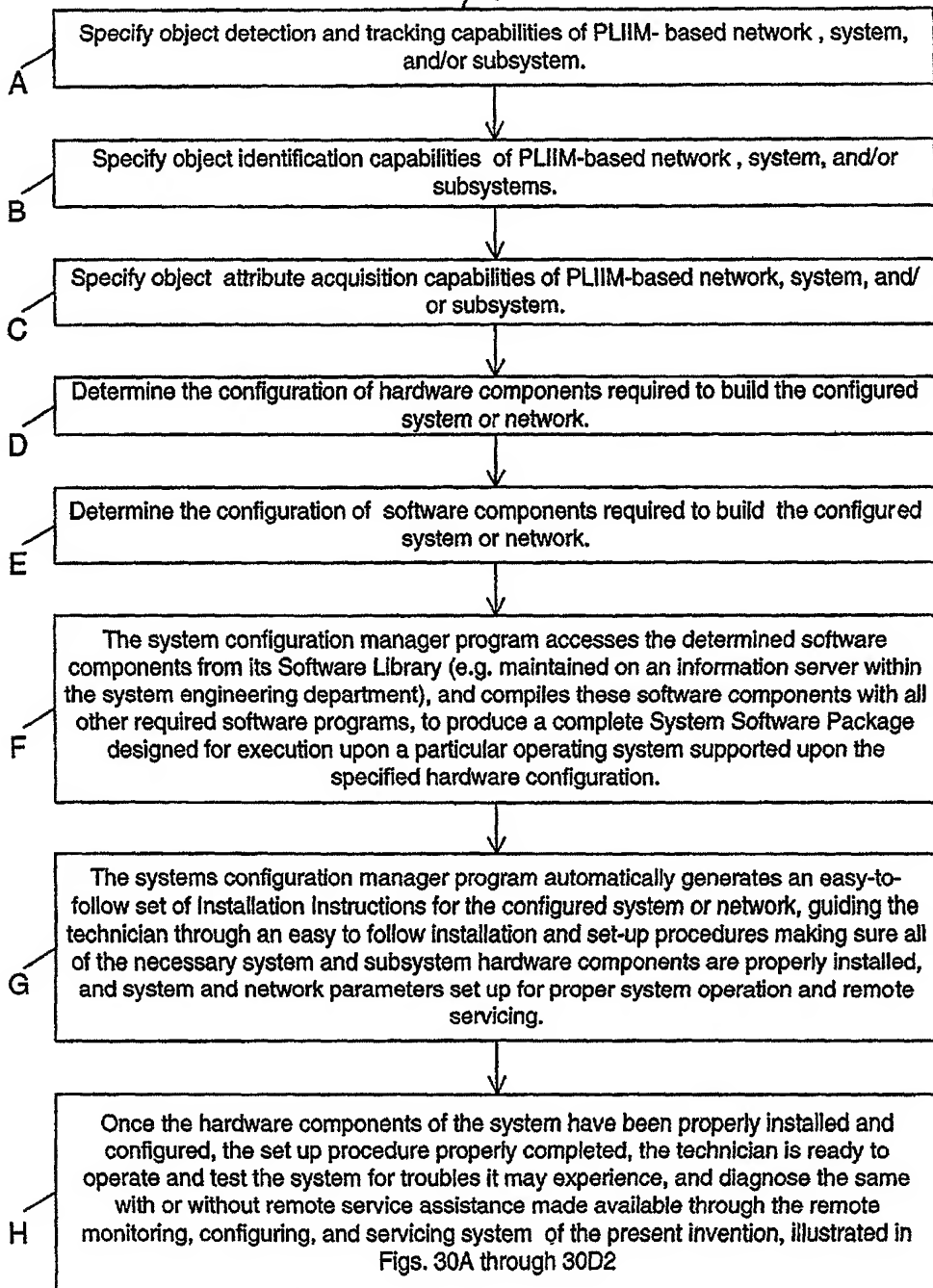


FIG. 25C

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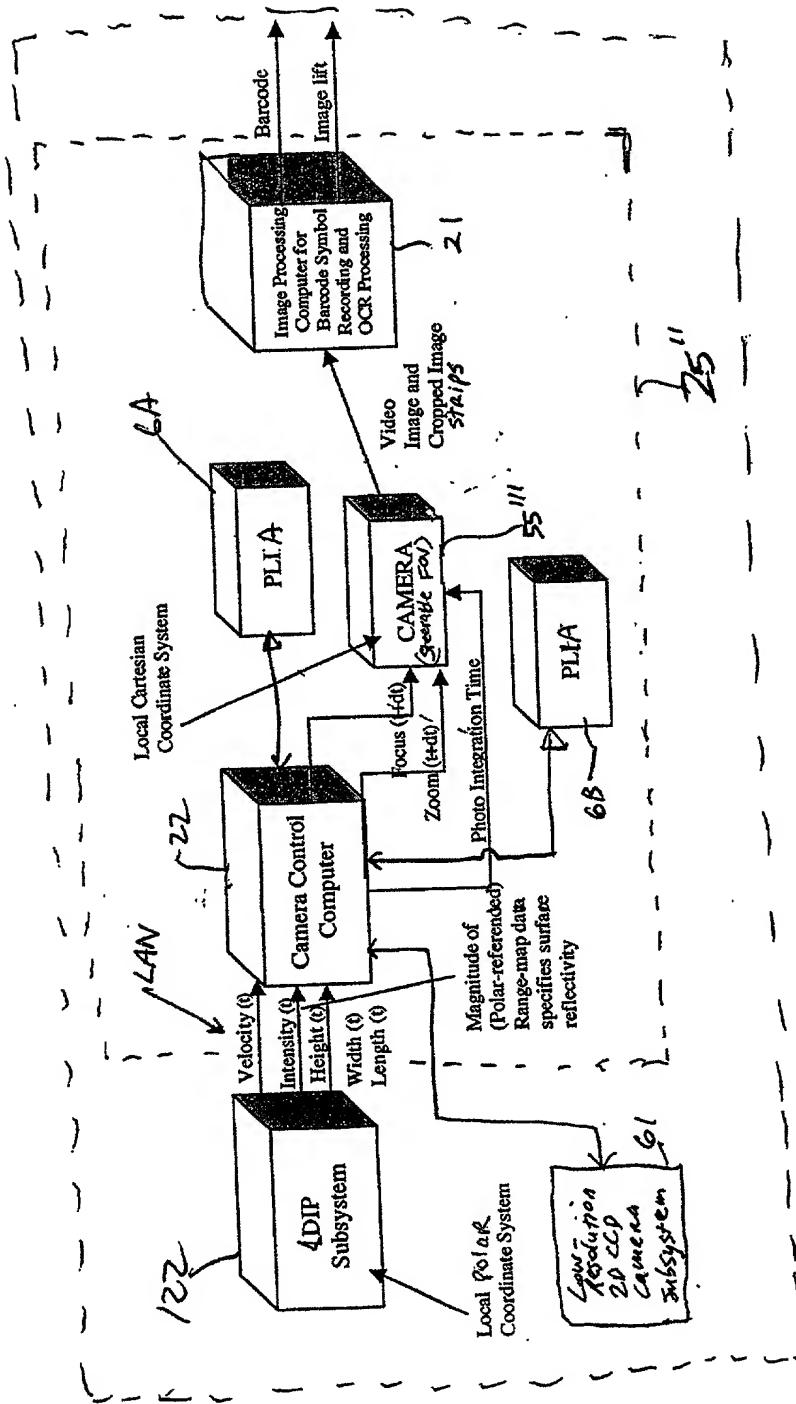
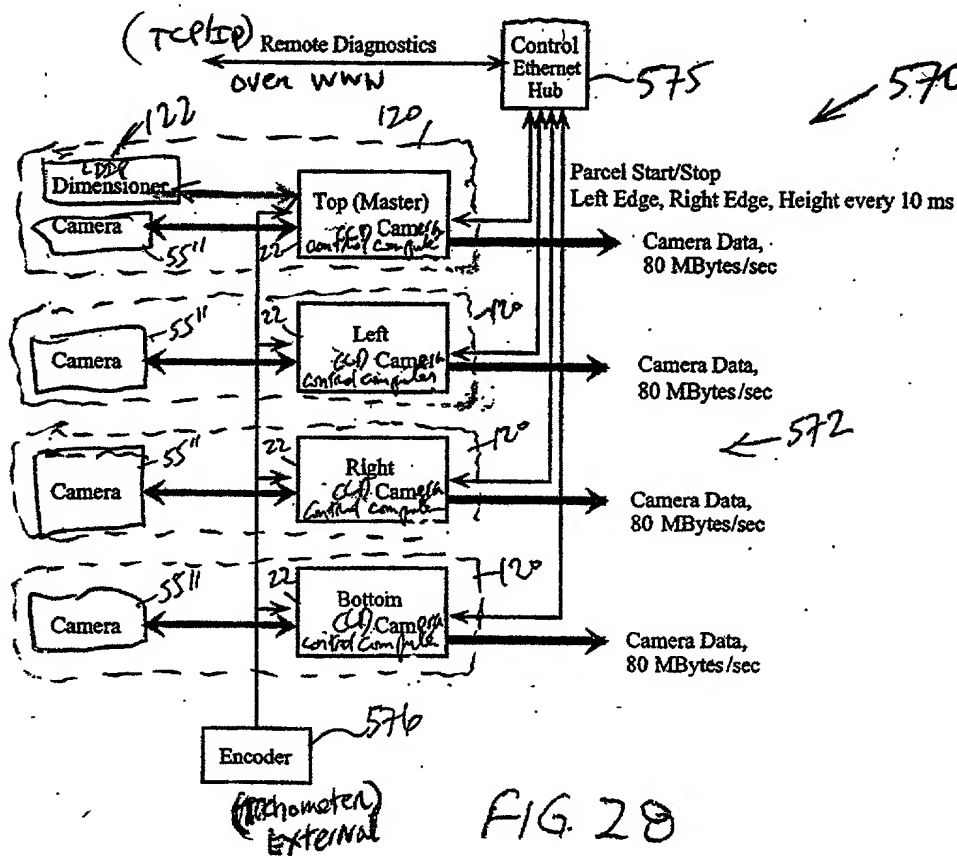
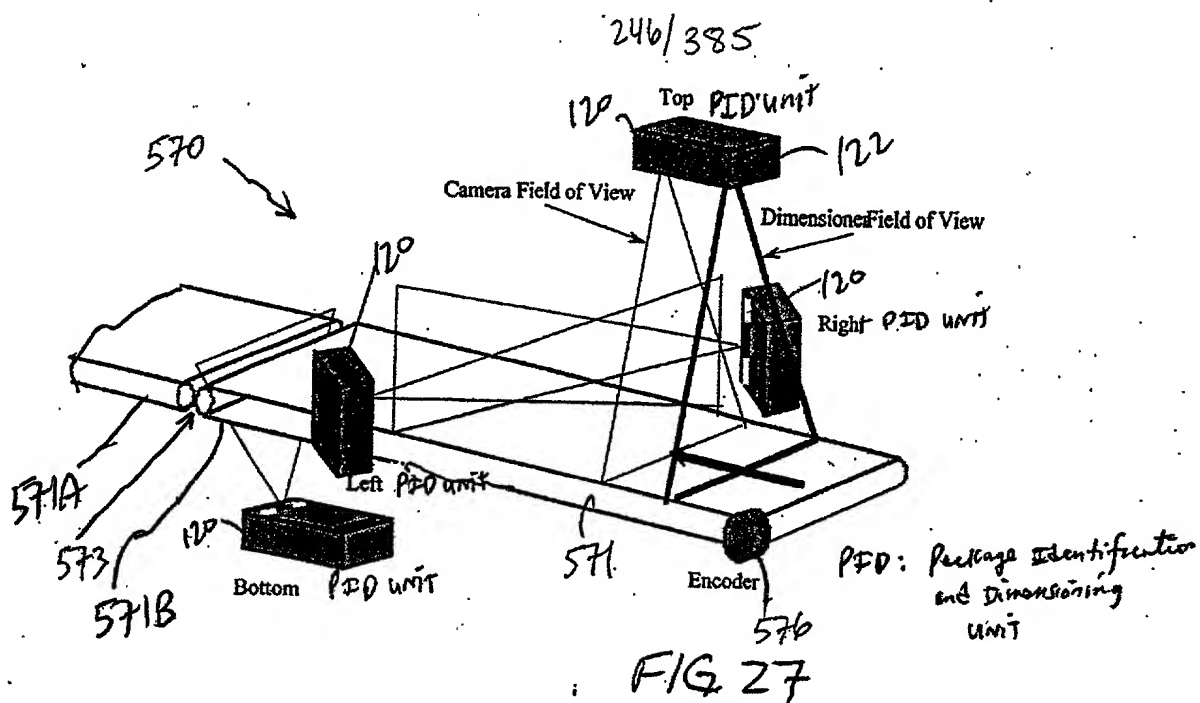


FIG. 26



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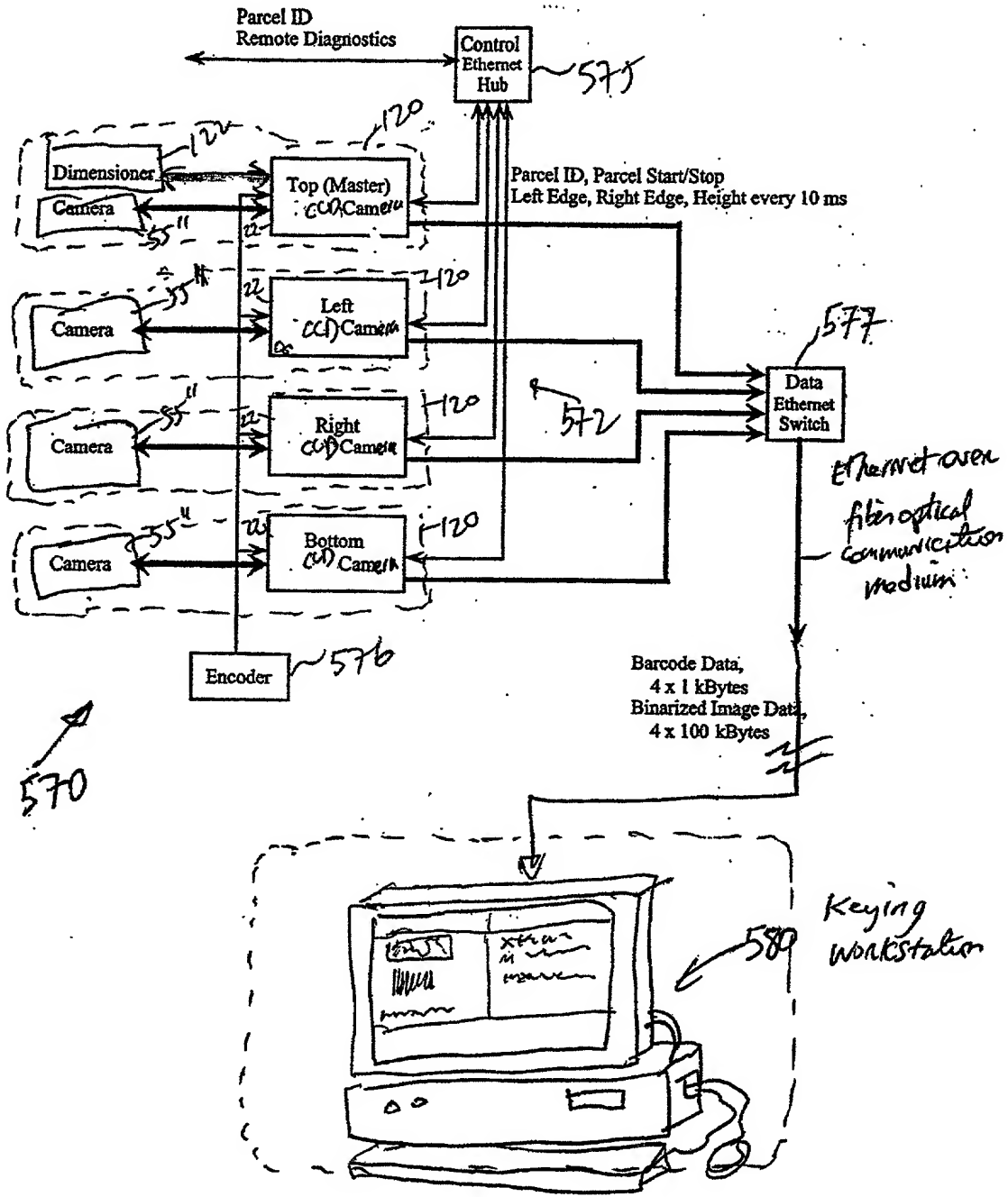
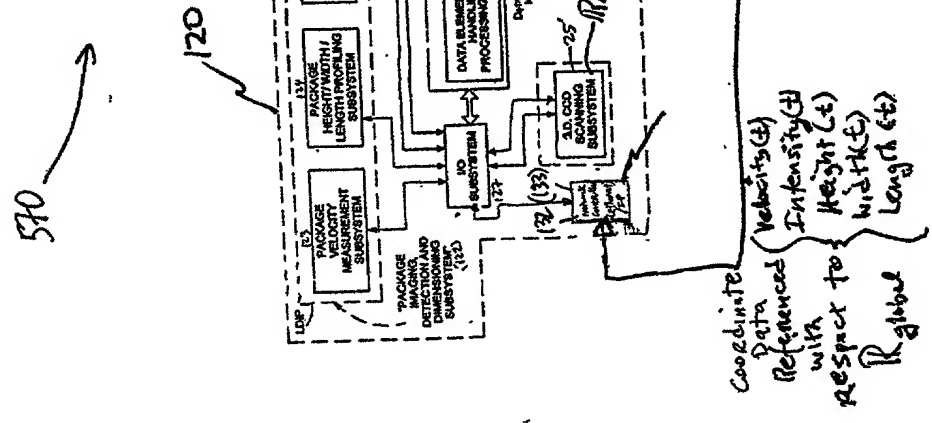
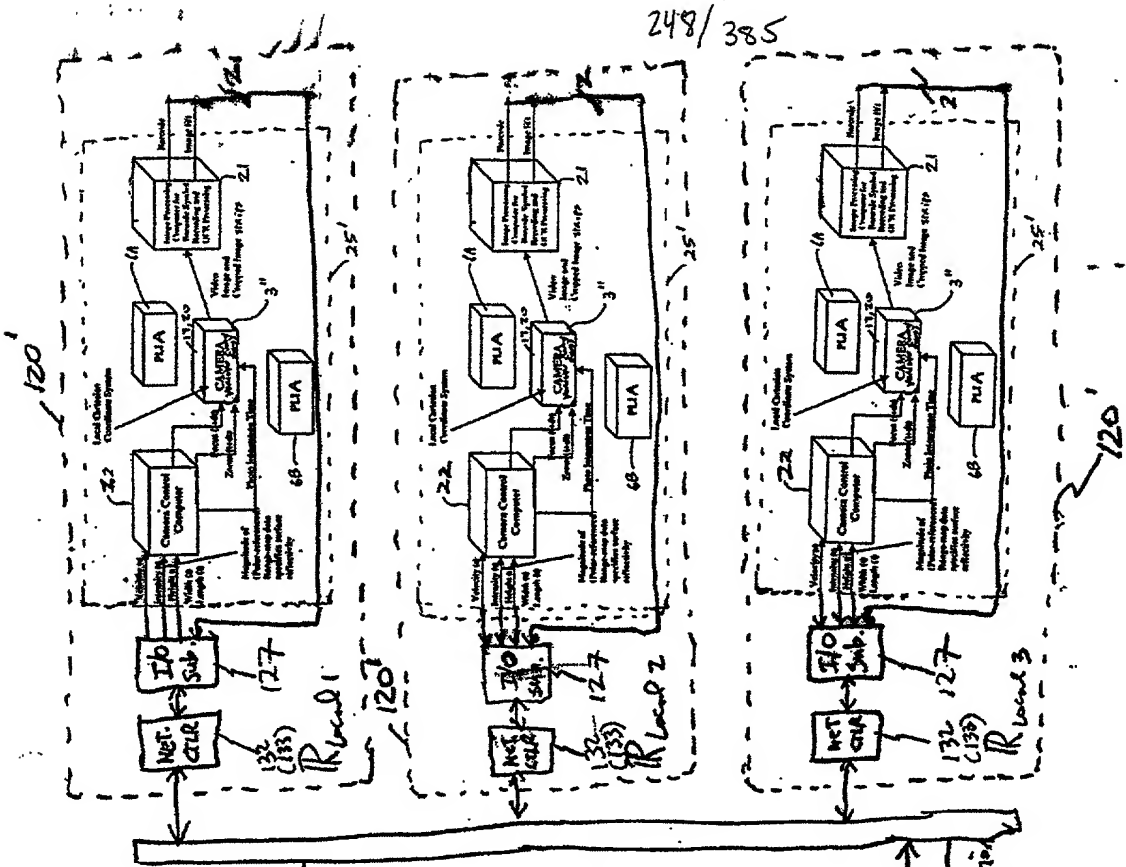
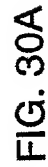


FIG. 29

FIG. 29



- Network, System, and Subsystem Configuration Parameters



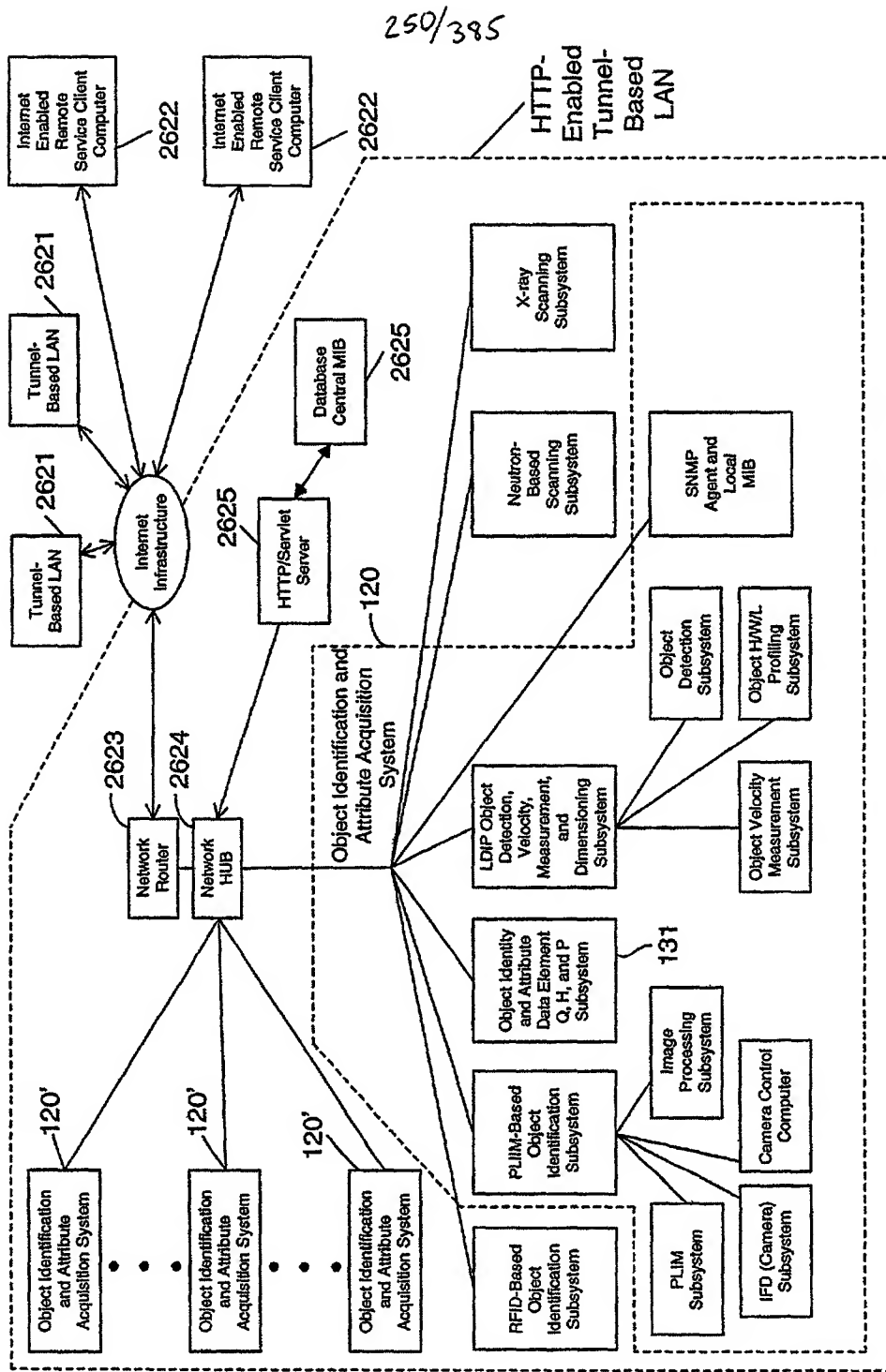


FIG. 30B

Network Configuration Parameters:

[Router IP address; no. of nodes (i.e. systems) in LAN; passwords, LAN location; name of customer facility; technical contact; phone no.; domain name; object identity codes; object attribute acquisition codes;....]

System Configuration Parameters:

[System IP Address; passwords; object identity codes; object attribute acquisition codes;....]

Monitorable and/or Configurable Parameters for Subsystems Within Each System:

- | | |
|--|---|
| <p>These subsystems generate object identity parameters</p> | <p><input type="checkbox"/> PLIM-based object identification subsystem: [object identity code; object attribute acquisition codes;....]</p> <p><input type="checkbox"/> PLIM Subsystem: [VLD status; power VLD; TIM function; temp.;....]</p> <p><input type="checkbox"/> IFD (Camera) Subsystem: [sensor temp;]</p> <p><input type="checkbox"/> Image Processing Subsystem (Computer): [processor load history; system up time; # of frames (pgs); barcode read rate; current line rate;....]</p> <p><input type="checkbox"/> Camera Contact Subsystem (Computer): [number of frames dropped; number of focused zoom commands; number and kinds of motor control errors;....]</p> |
| <p>This system links object attribute data element parameters (i.e. object identity data element) to corresponding object identity parameters (i.e. object attribute data element)</p> | <p><input type="checkbox"/> RFID-based object identification subsystem: [....]</p> <p><input type="checkbox"/> Object identity and attribute data element queuing, handling and processing subsystem: [....]</p> |
| <p>These subsystems generate object attribute parameters</p> | <p><input type="checkbox"/> LDIP object identification, velocity-measurement, and dimensioning subsystem: [....]</p> <p><input type="checkbox"/> Object velocity measurement subsystem: [polygon RPM; polygon laser output X; channel X drift; channel X noise; trigger error events; instant lock reference drift; temperature]</p> <p><input type="checkbox"/> Object H/W/L profiling subsystem</p> <p><input type="checkbox"/> Object detection subsystem: [non-singulation/ singulation code;....]</p> <p><input type="checkbox"/> X-ray scanning subsystem: [....]</p> <p><input type="checkbox"/> Neutron-beam scanning subsystem: [....]</p> |

FIG. 30C

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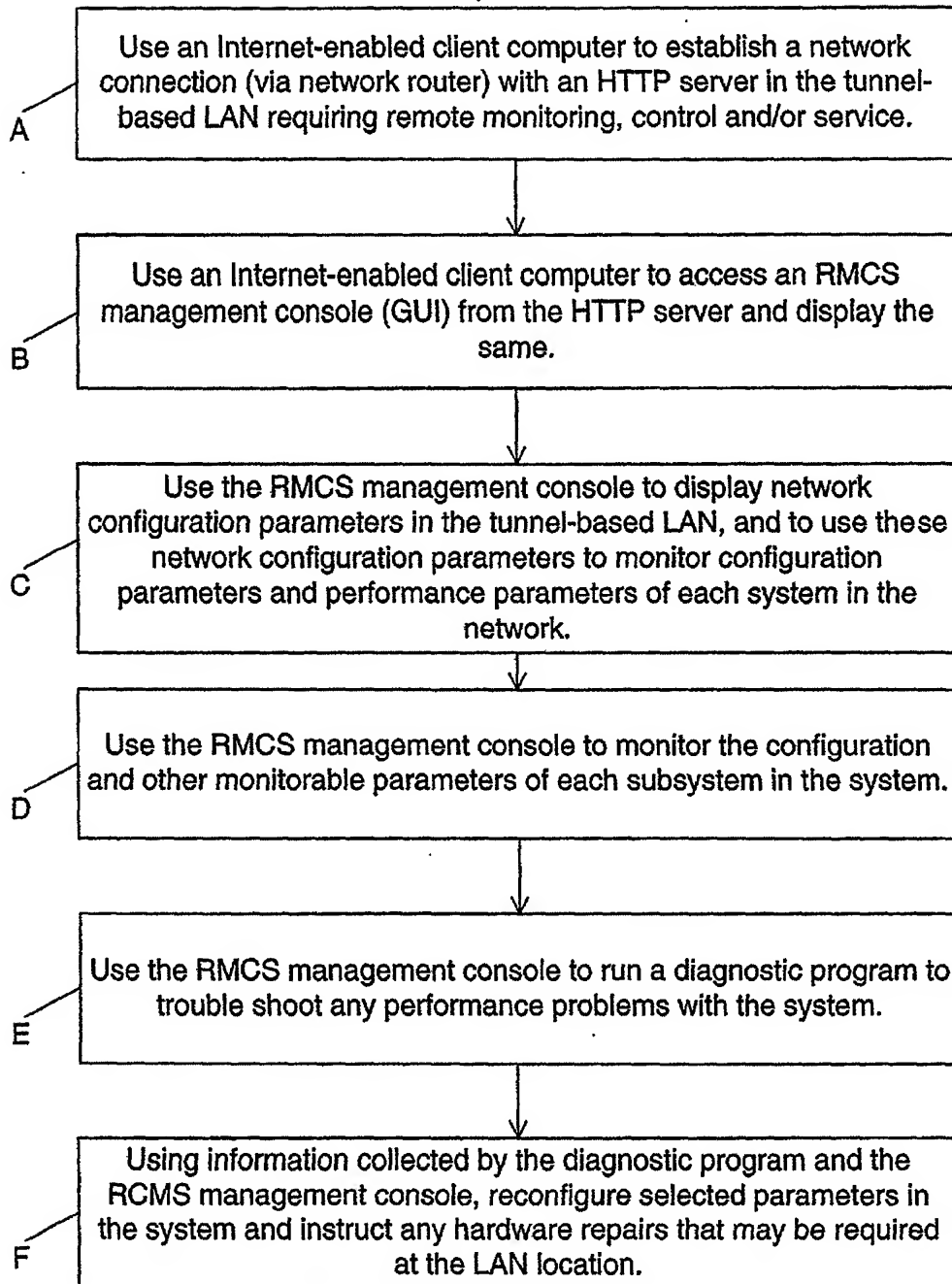


FIG. 30D1

253/385 (A)

G

Use the RMCS management console to rerun diagnostic programs on troubled systems and subsystems in the LAN after parameter reconfiguration and/or hardware repair at the LAN location, so as to test the performance of such systems and subsystems and the overall tunnel based LAN.

H

Use the RMCS management console to monitor parameters of the system and subsystems in the tunnel based LAN, from time to time, to determine whether or not the system and/or network tunnel is required.

I

Use the RMCS management console to record all monitored parameter records and result of diagnostic programs in a customer service database for future reference, and access during subsequent remote service calls over the Internet.

FIG. 30D2

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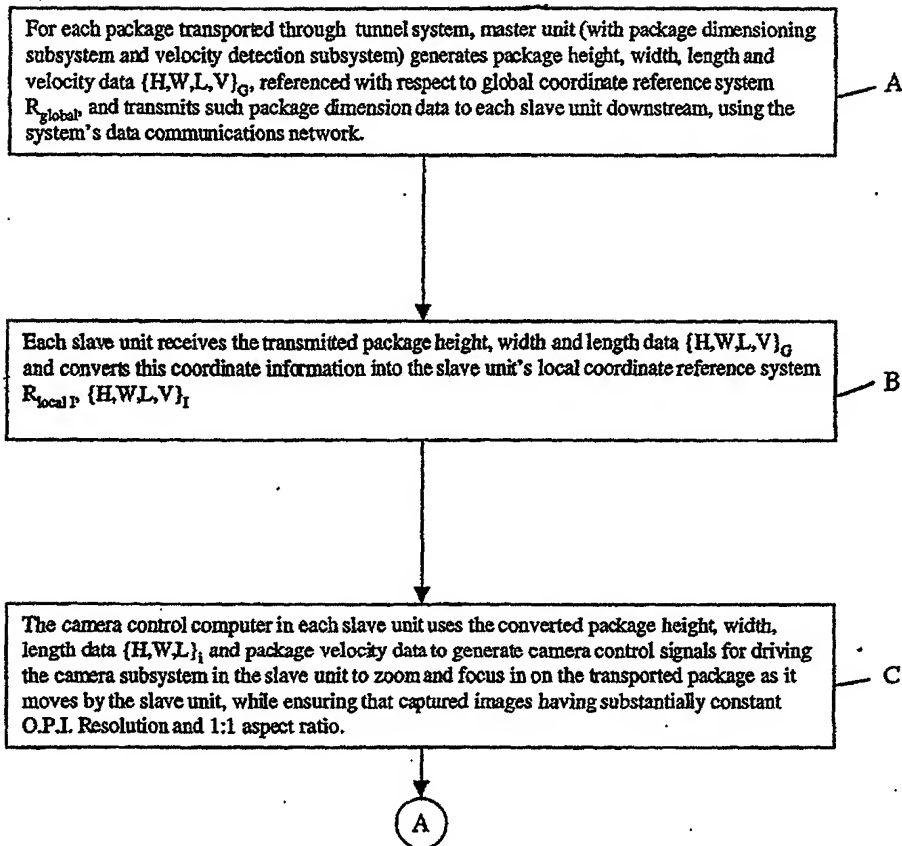
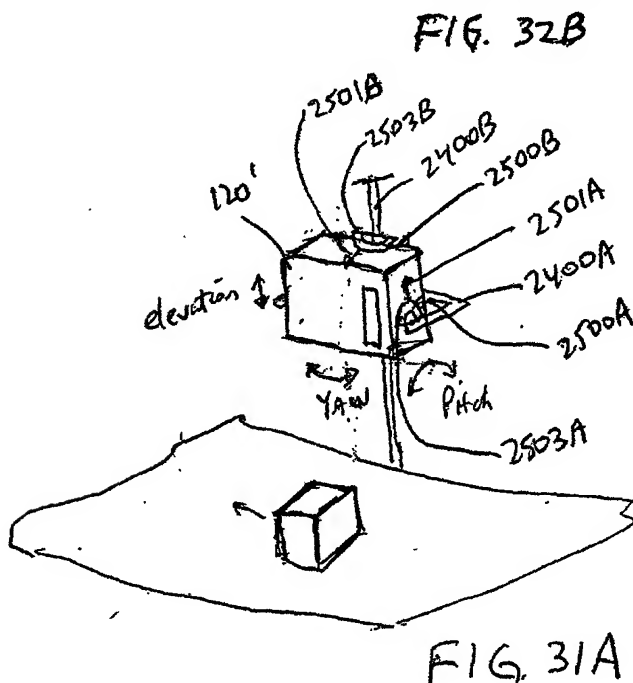
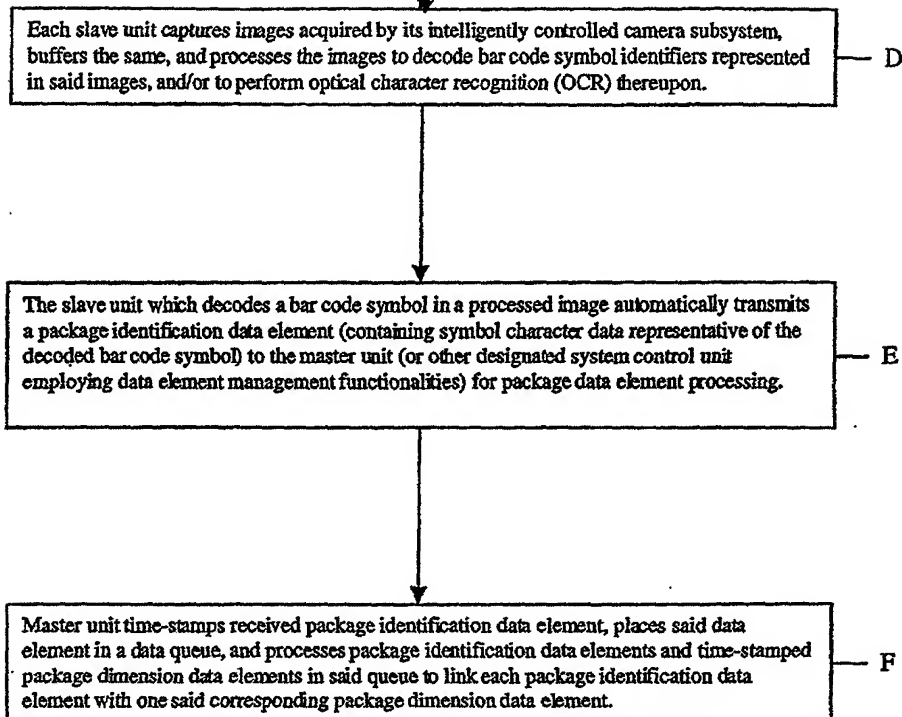
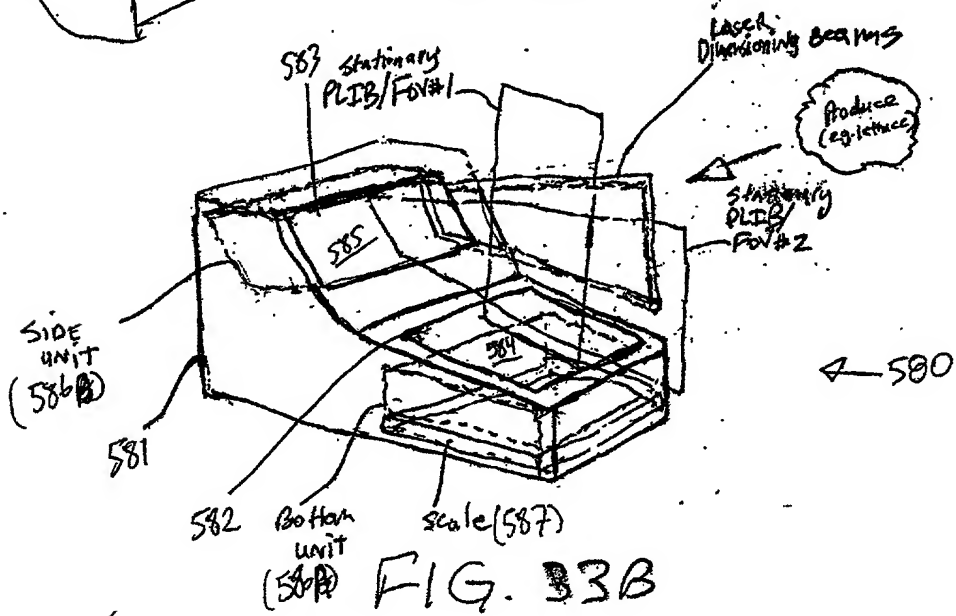
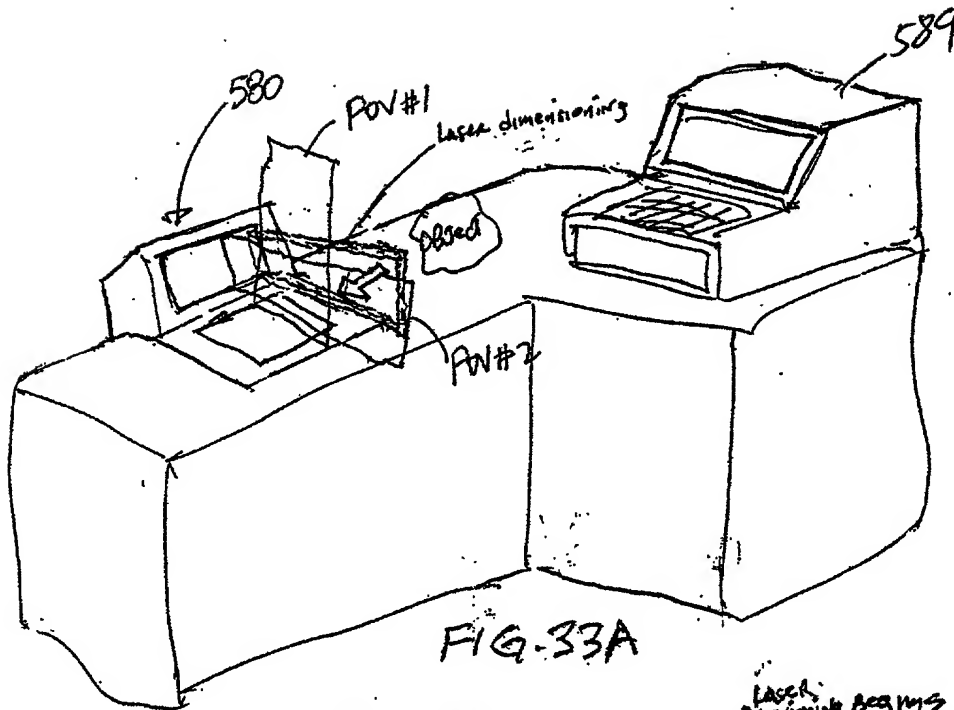


FIG. 32A

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DATE	NAME	AMOUNT	DATE	NAME	AMOUNT
1880	Wm. H. H.	100	1880	Wm. H. H.	100
1881	Wm. H. H.	100	1881	Wm. H. H.	100
1882	Wm. H. H.	100	1882	Wm. H. H.	100
1883	Wm. H. H.	100	1883	Wm. H. H.	100
1884	Wm. H. H.	100	1884	Wm. H. H.	100
1885	Wm. H. H.	100	1885	Wm. H. H.	100
1886	Wm. H. H.	100	1886	Wm. H. H.	100
1887	Wm. H. H.	100	1887	Wm. H. H.	100
1888	Wm. H. H.	100	1888	Wm. H. H.	100
1889	Wm. H. H.	100	1889	Wm. H. H.	100
1890	Wm. H. H.	100	1890	Wm. H. H.	100
1891	Wm. H. H.	100	1891	Wm. H. H.	100
1892	Wm. H. H.	100	1892	Wm. H. H.	100
1893	Wm. H. H.	100	1893	Wm. H. H.	100
1894	Wm. H. H.	100	1894	Wm. H. H.	100
1895	Wm. H. H.	100	1895	Wm. H. H.	100
1896	Wm. H. H.	100	1896	Wm. H. H.	100
1897	Wm. H. H.	100	1897	Wm. H. H.	100
1898	Wm. H. H.	100	1898	Wm. H. H.	100
1899	Wm. H. H.	100	1899	Wm. H. H.	100
1900	Wm. H. H.	100	1900	Wm. H. H.	100

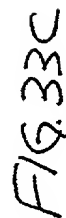


FIG. 33C

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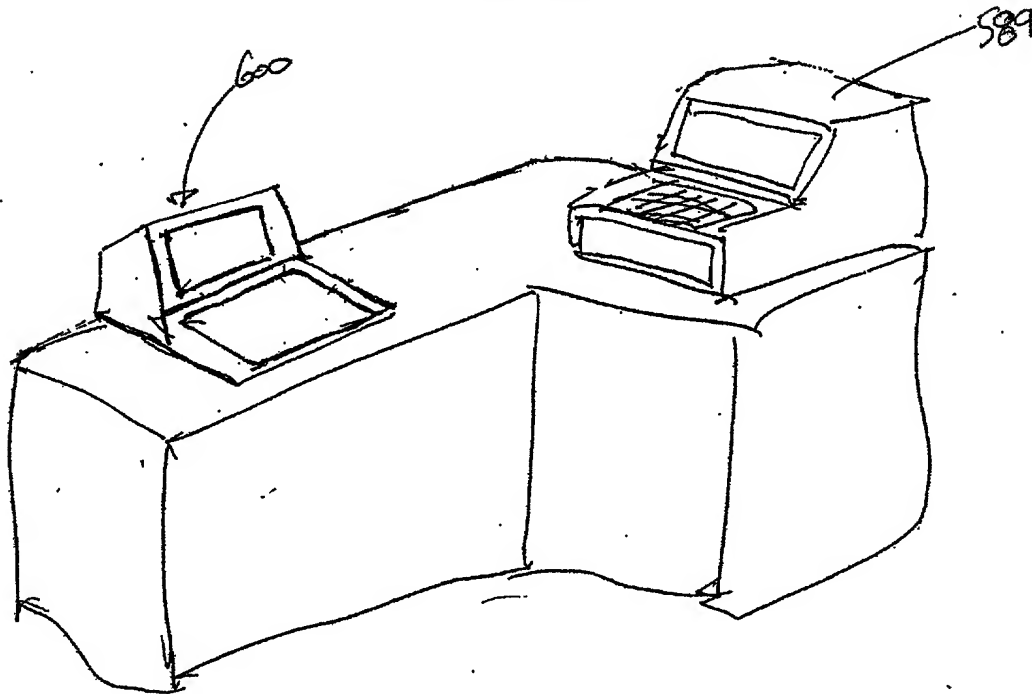


FIG. 34A

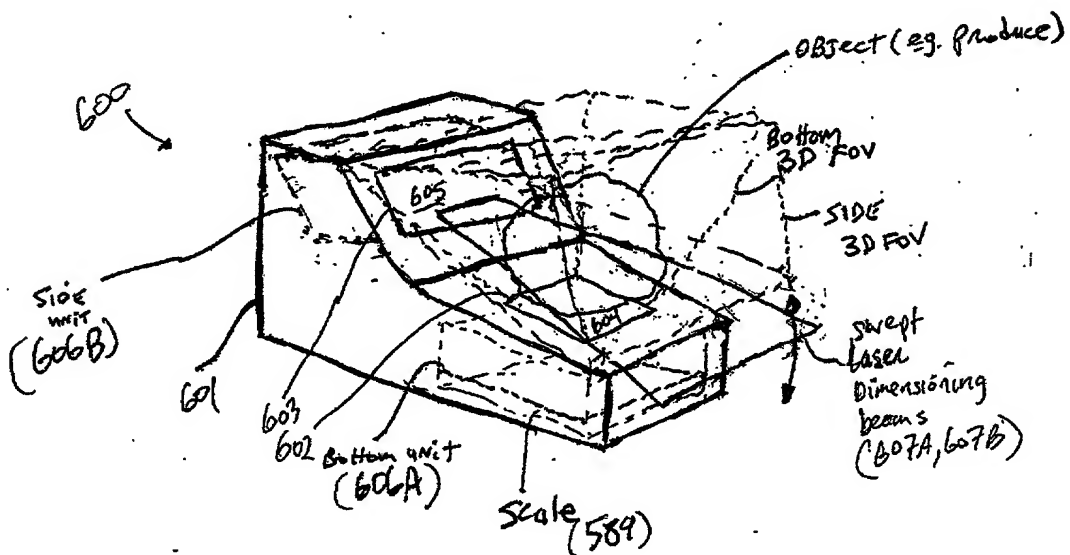


FIG. 34B

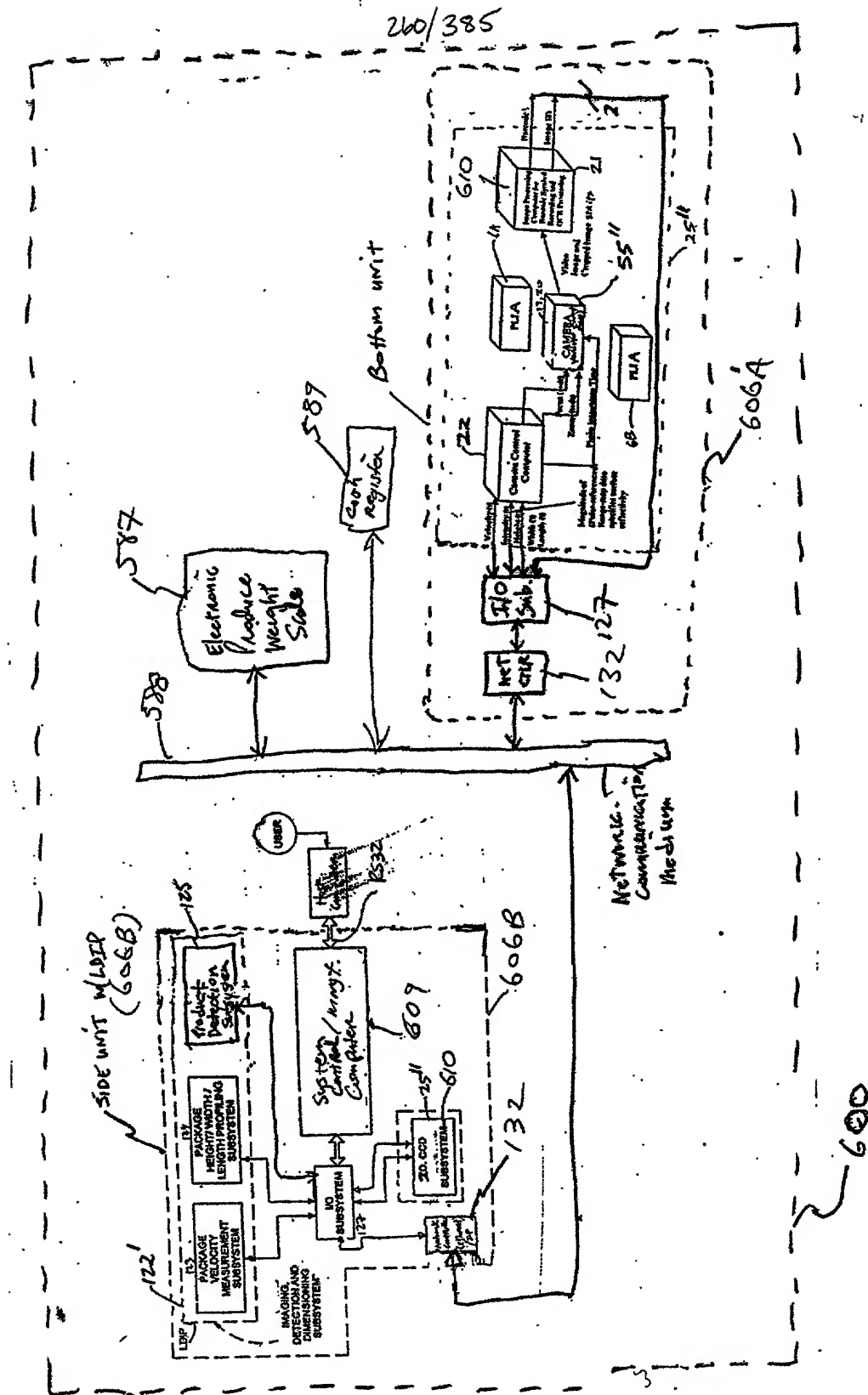
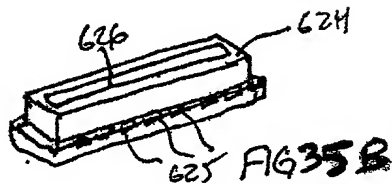
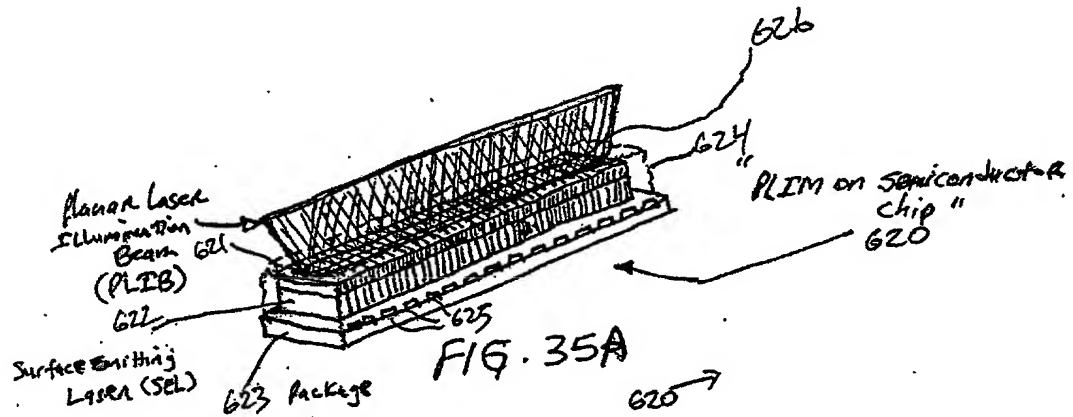
[illegible]

FIG. 34C

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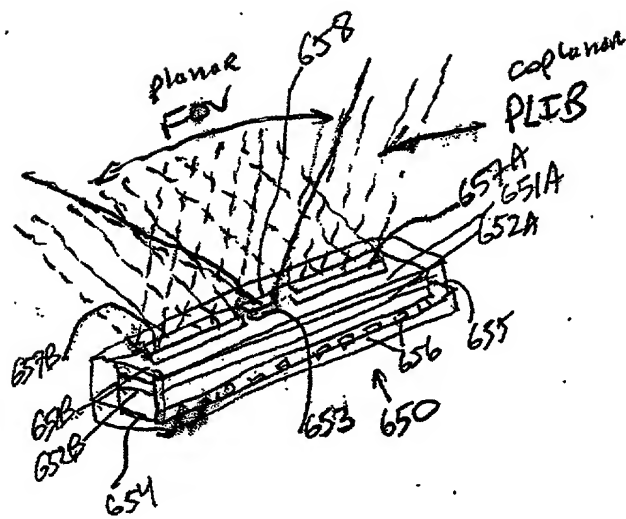


FIG. 37

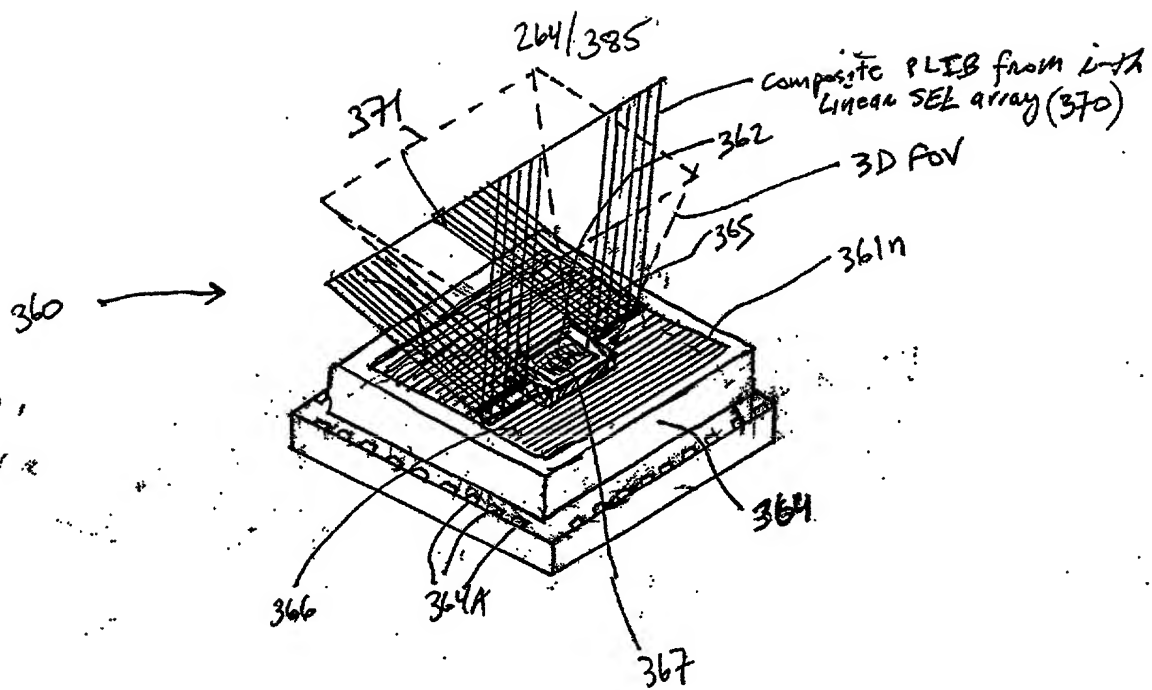


FIG. 38A

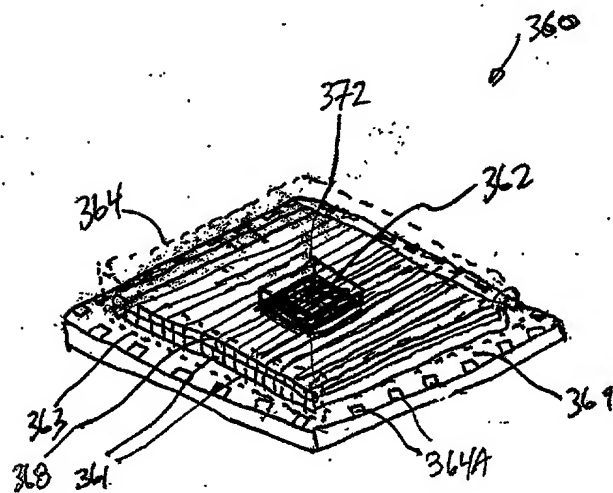


FIG. 38B

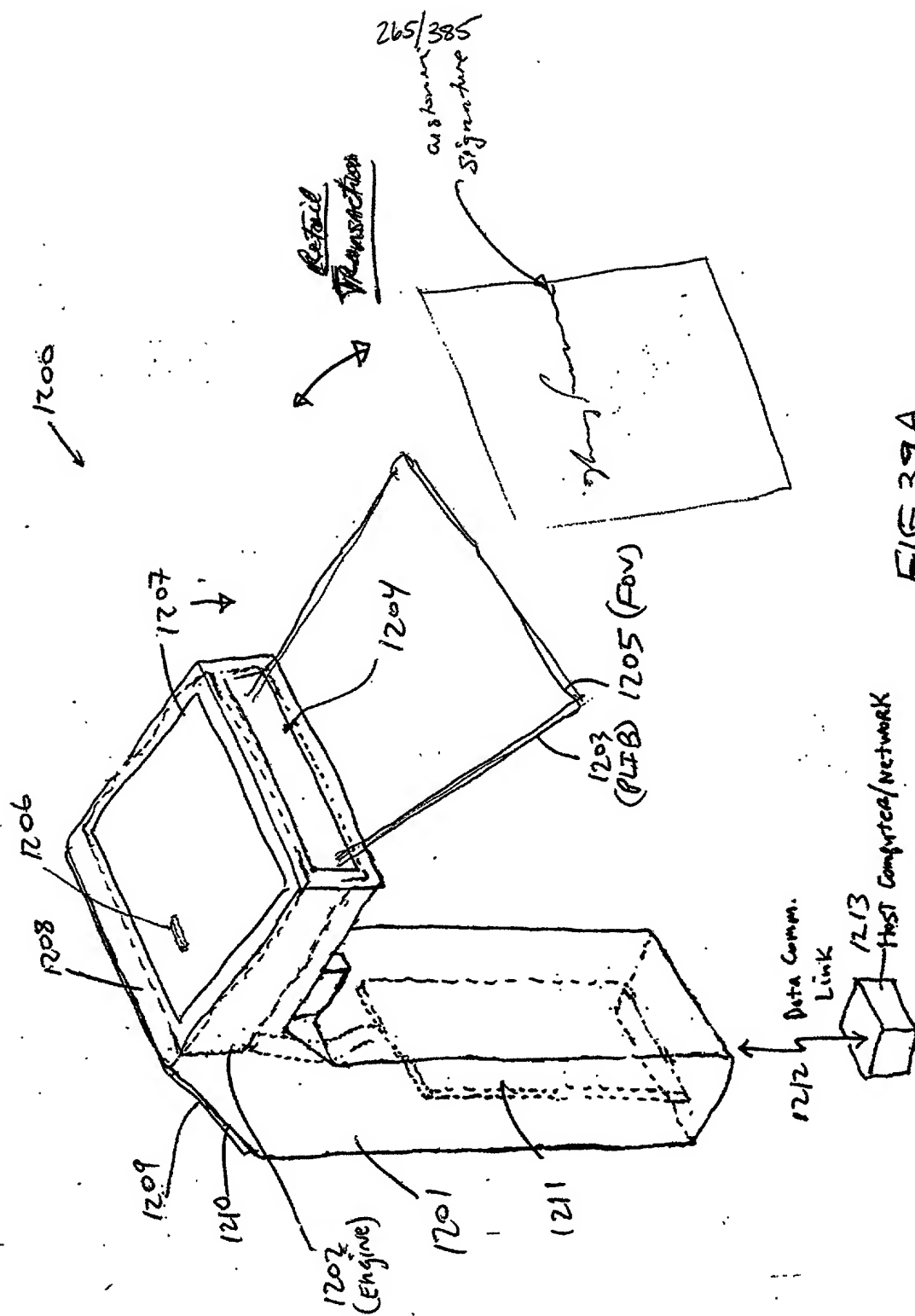
[illegible]

FIG. 39A

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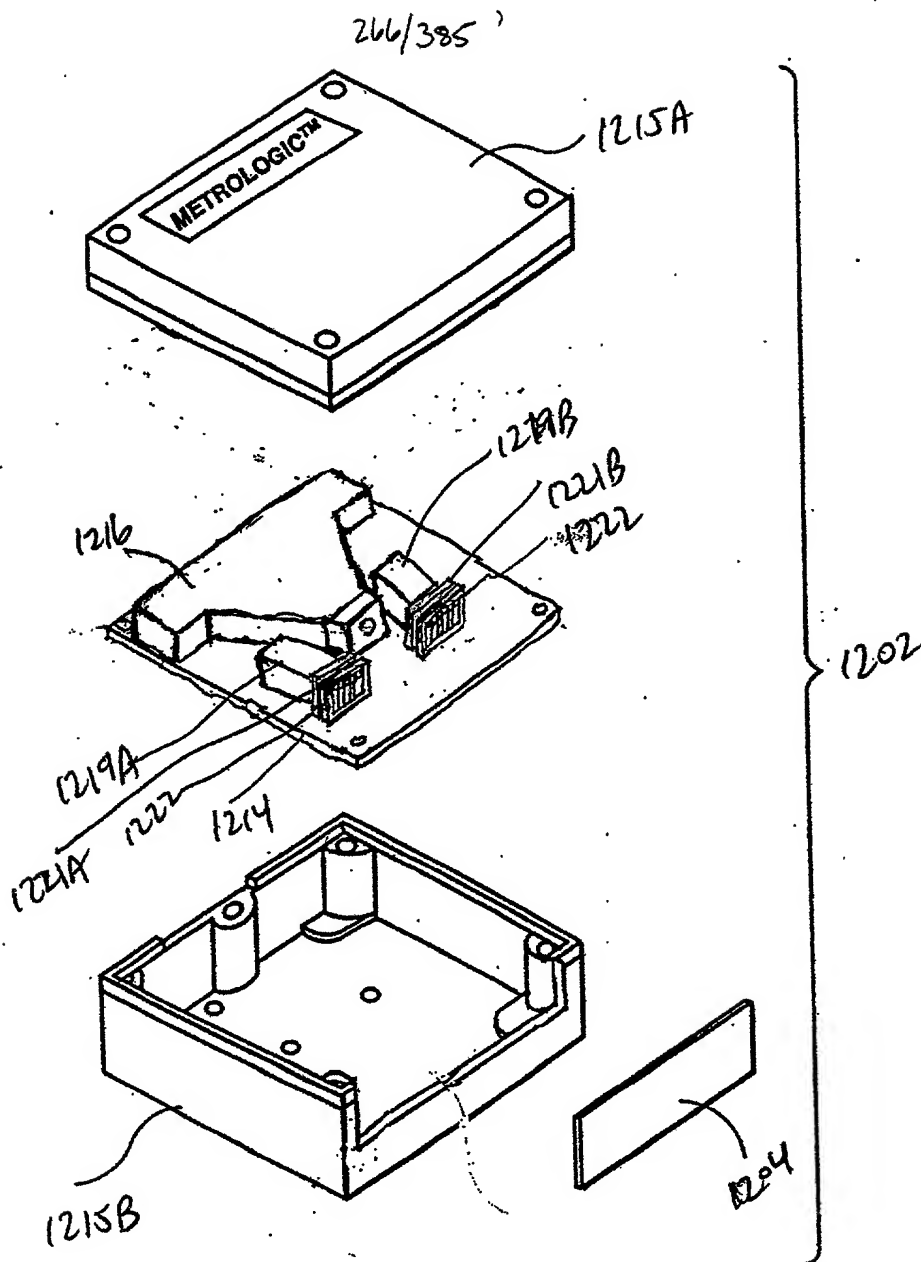


FIG. 39B

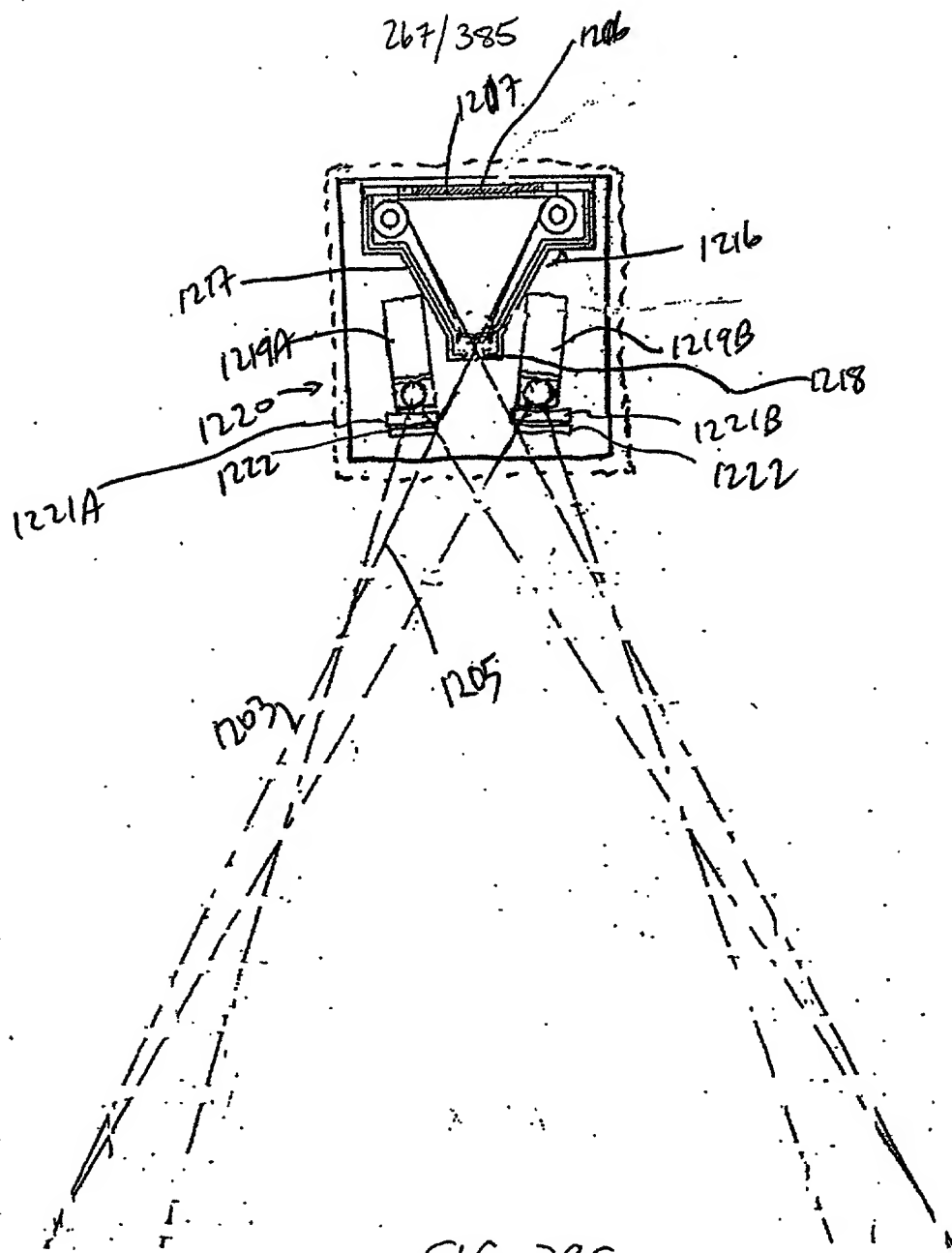


FIG. 39C

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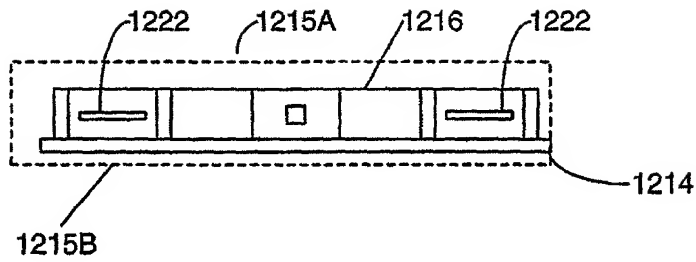


FIG. 39D

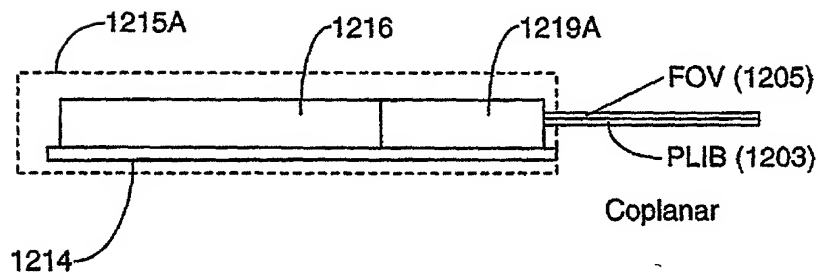


FIG. 39E

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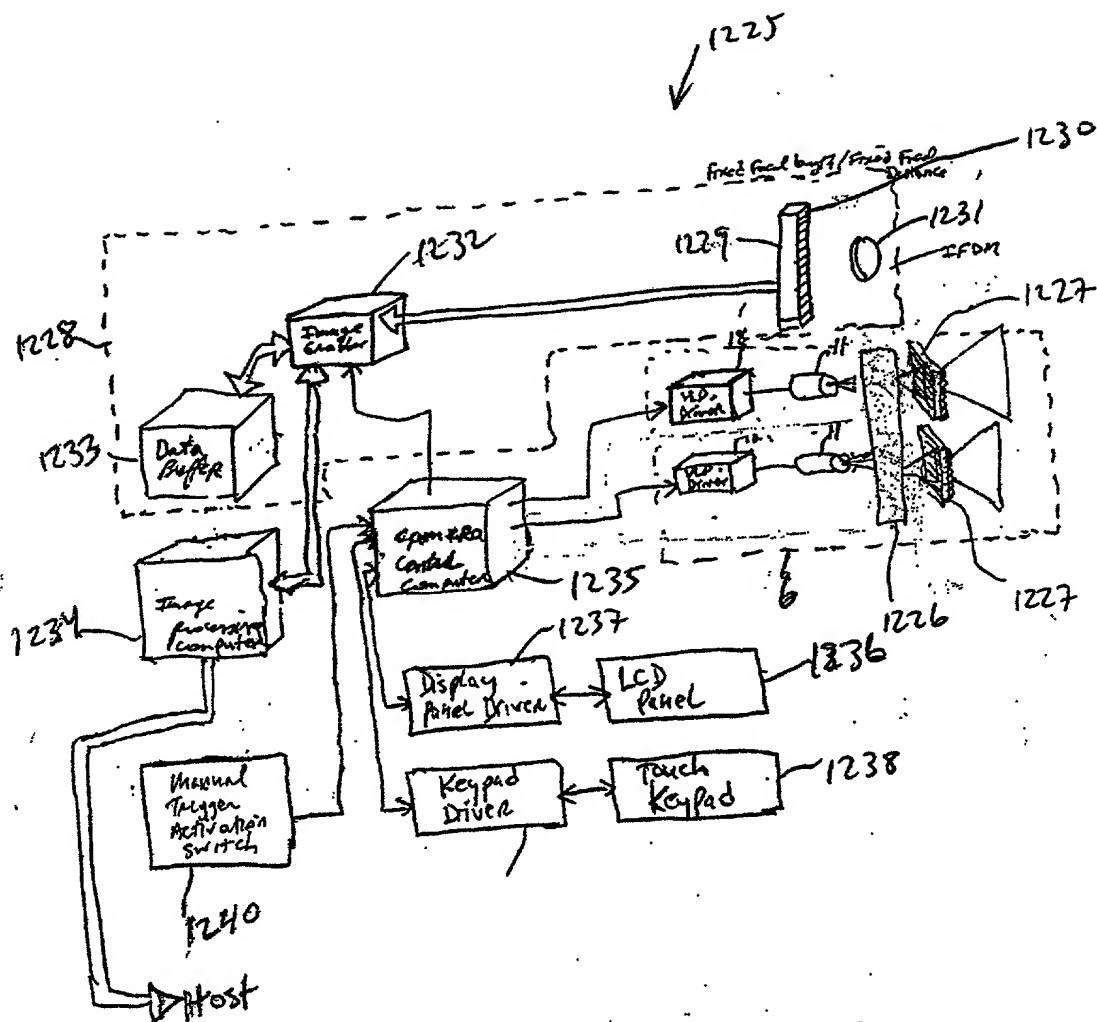
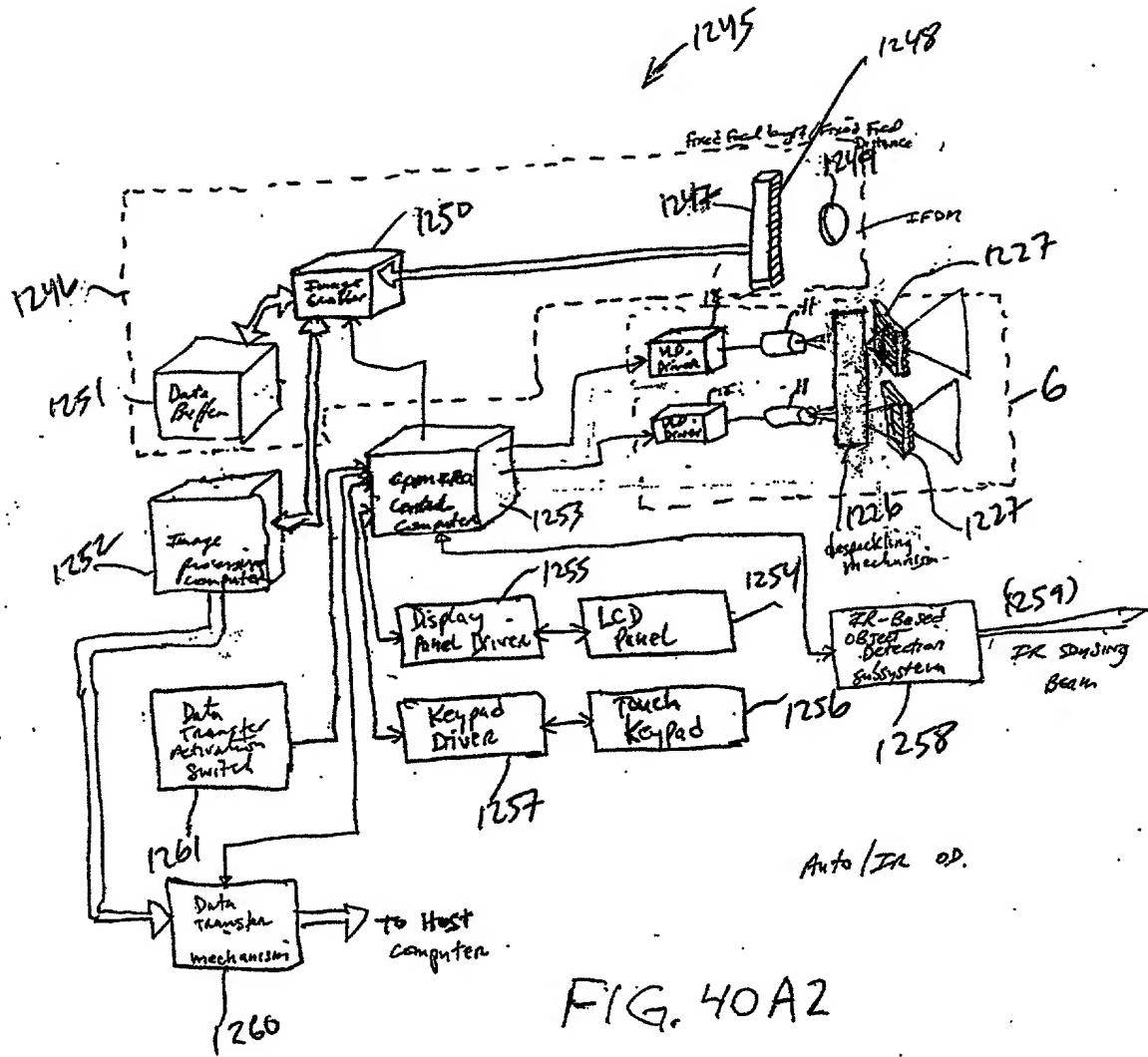


FIG. 40A1

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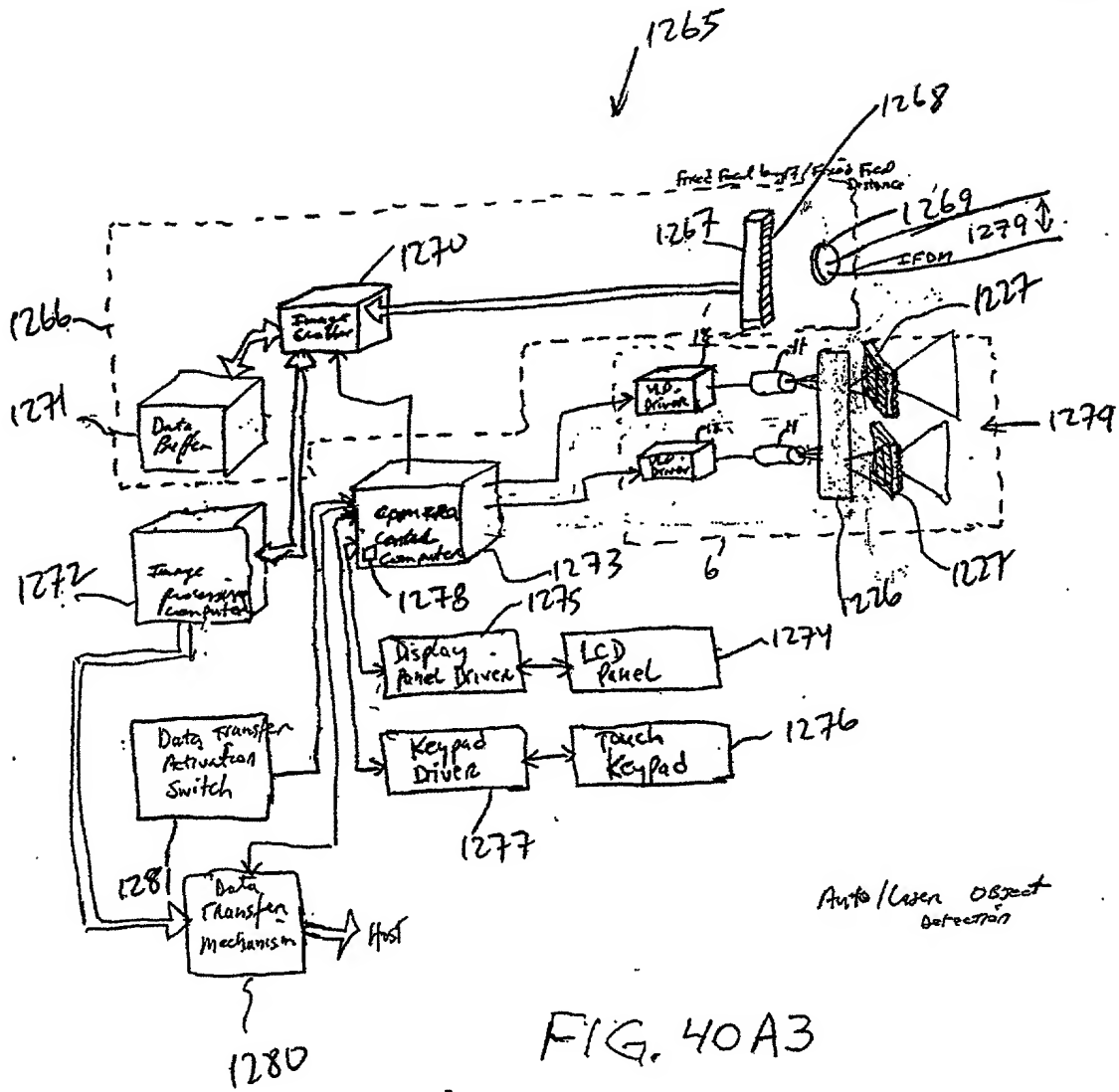
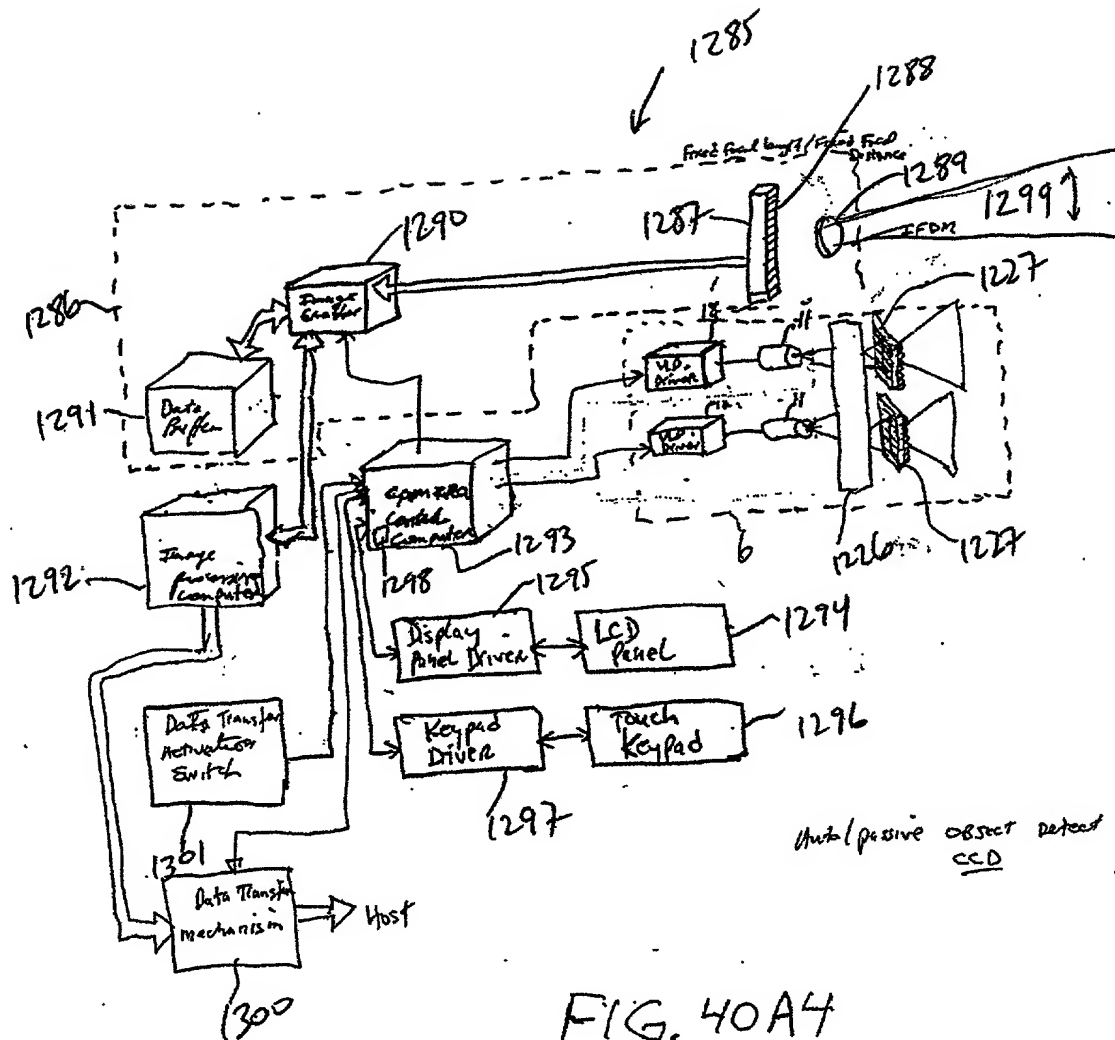


FIG. 40A3

姓名	性别	年龄	籍贯	职业	住址	电话	备注
王德胜	男	45	山东	教师	北京路123号	1234	
李小红	女	32	江苏	医生	文化路45号	5678	
张国强	男	58	河南	工人	工业路78号	9012	
刘小芳	女	28	四川	护士	健康路34号	3456	
陈大明	男	62	浙江	农民	农业路67号	7890	
赵小华	女	38	湖北	记者	新闻路90号	0123	
孙伟明	男	42	广东	工程师	科技路21号	4567	
周丽娟	女	35	湖南	会计	财务路54号	8901	
吴大刚	男	55	安徽	干部	政府路87号	2345	
郑小梅	女	25	江西	学生	学府路101号	6789	
冯国强	男	60	山西	工人	工厂路134号	0123	
马小华	女	30	陕西	教师	学校路167号	4567	
徐大明	男	50	甘肃	医生	医院路190号	8901	
周小芳	女	22	宁夏	护士	护理路213号	2345	
孙伟明	男	48	青海	工人	建设路246号	6789	
周丽娟	女	33	内蒙古	记者	报社路279号	0123	
吴大刚	男	53	新疆	工程师	技术路302号	4567	
郑小梅	女	27	广西	会计	财务路335号	8901	
冯国强	男	57	海南	干部	政府路368号	2345	
马小华	女	23	重庆	学生	学府路401号	6789	
徐大明	男	49	四川	工人	工厂路434号	0123	
周丽娟	女	29	贵州	教师	学校路467号	4567	
孙伟明	男	59	云南	医生	医院路500号	8901	
周小芳	女	24	湖北	护士	护理路533号	2345	
孙伟明	男	44	湖南	工人	建设路566号	6789	
周丽娟	女	34	江西	记者	报社路599号	0123	
吴大刚	男	54	安徽	工程师	技术路632号	4567	
郑小梅	女	26	浙江	会计	财务路665号	8901	
冯国强	男	56	江苏	干部	政府路698号	2345	
马小华	女	21	山东	学生	学府路731号	6789	
徐大明	男	47	河南	工人	工厂路764号	0123	
周丽娟	女	28	河北	教师	学校路797号	4567	
孙伟明	男	58	山西	医生	医院路830号	8901	
周小芳	女	25	陕西	护士	护理路863号	2345	
孙伟明	男	43	甘肃	工人	建设路896号	6789	
周丽娟	女	31	宁夏	记者	报社路929号	0123	
吴大刚	男	51	青海	工程师	技术路962号	4567	
郑小梅	女	23	内蒙古	会计	财务路995号	8901	
冯国强	男	52	广西	干部	政府路1028号	2345	
马小华	女	20	海南	学生	学府路1061号	6789	
徐大明	男	46	重庆	工人	工厂路1094号	0123	
周丽娟	女	27	四川	教师	学校路1127号	4567	
孙伟明	男	57	贵州	医生	医院路1160号	8901	
周小芳	女	24	云南	护士	护理路1193号	2345	
孙伟明	男	42	湖北	工人	建设路1226号	6789	
周丽娟	女	30	湖南	记者	报社路1259号	0123	
吴大刚	男	50	江西	工程师	技术路1292号	4567	
郑小梅	女	22	安徽	会计	财务路1325号	8901	
冯国强	男	55	浙江	干部	政府路1358号	2345	
马小华	女	19	江苏	学生	学府路1391号	6789	
徐大明	男	45	山东	工人	工厂路1424号	0123	
周丽娟	女	26	河南	教师	学校路1457号	4567	
孙伟明	男	56	河北	医生	医院路1490号	8901	
周小芳	女	23	山西	护士	护理路1523号	2345	
孙伟明	男	41	陕西	工人	建设路1556号	6789	
周丽娟	女	29	甘肃	记者	报社路1589号	0123	



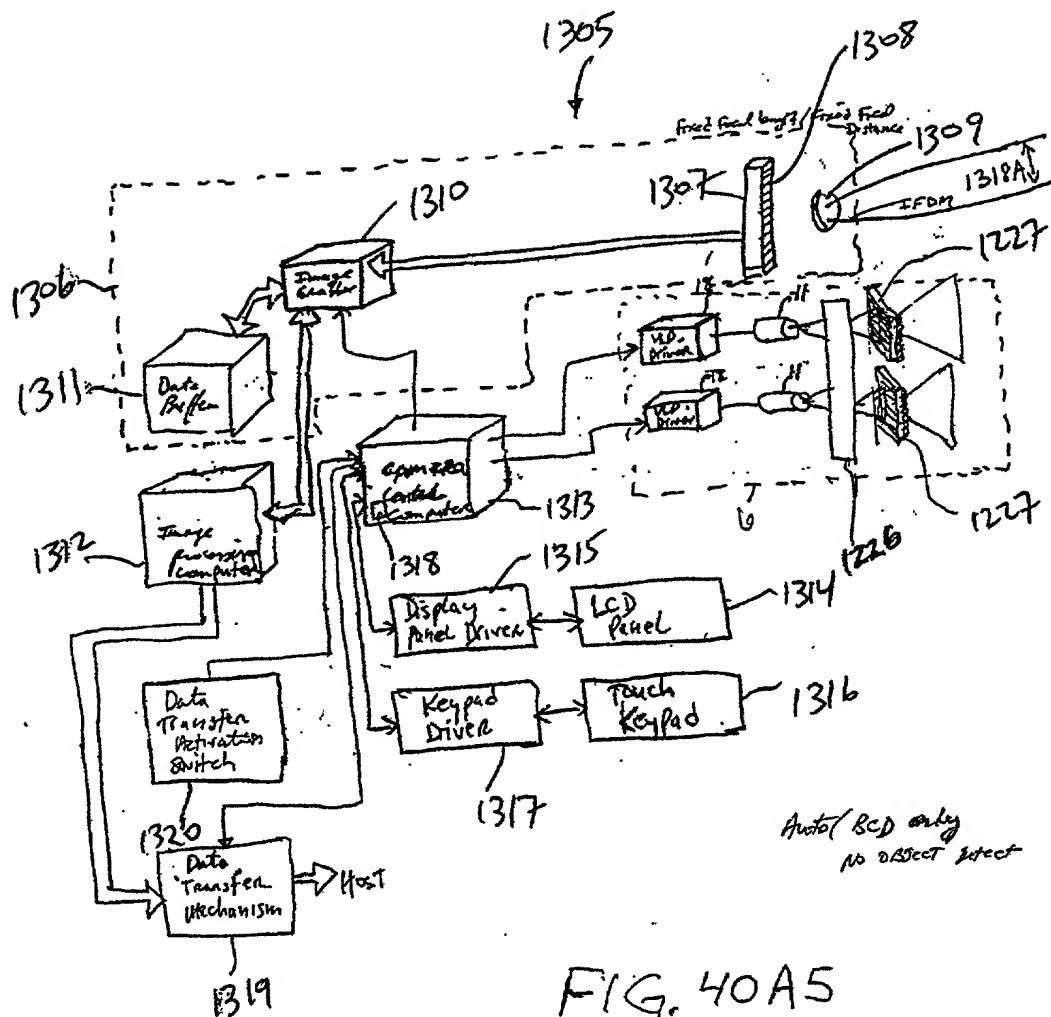
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FIG. 40A5



FIG. 40B1.

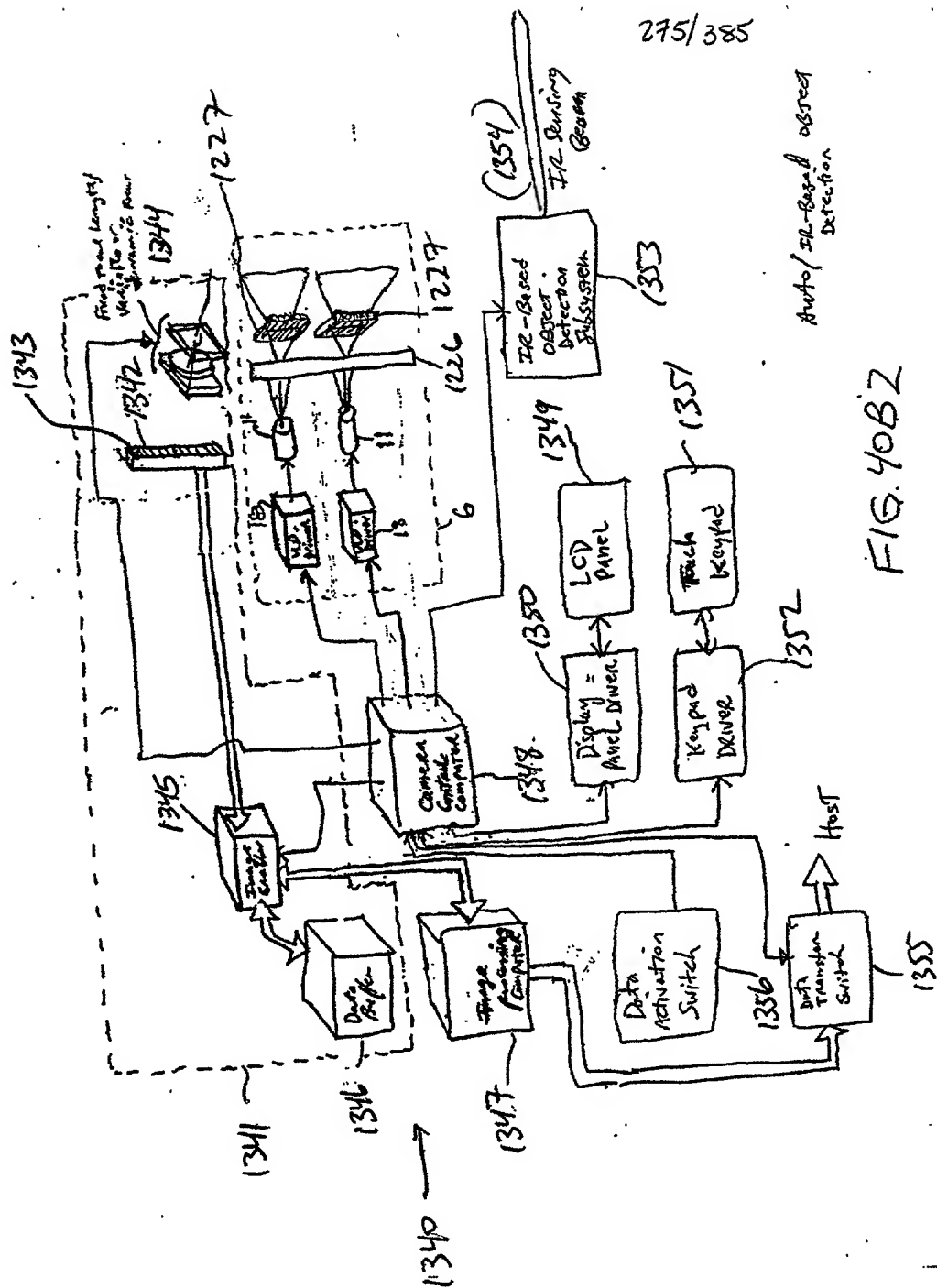
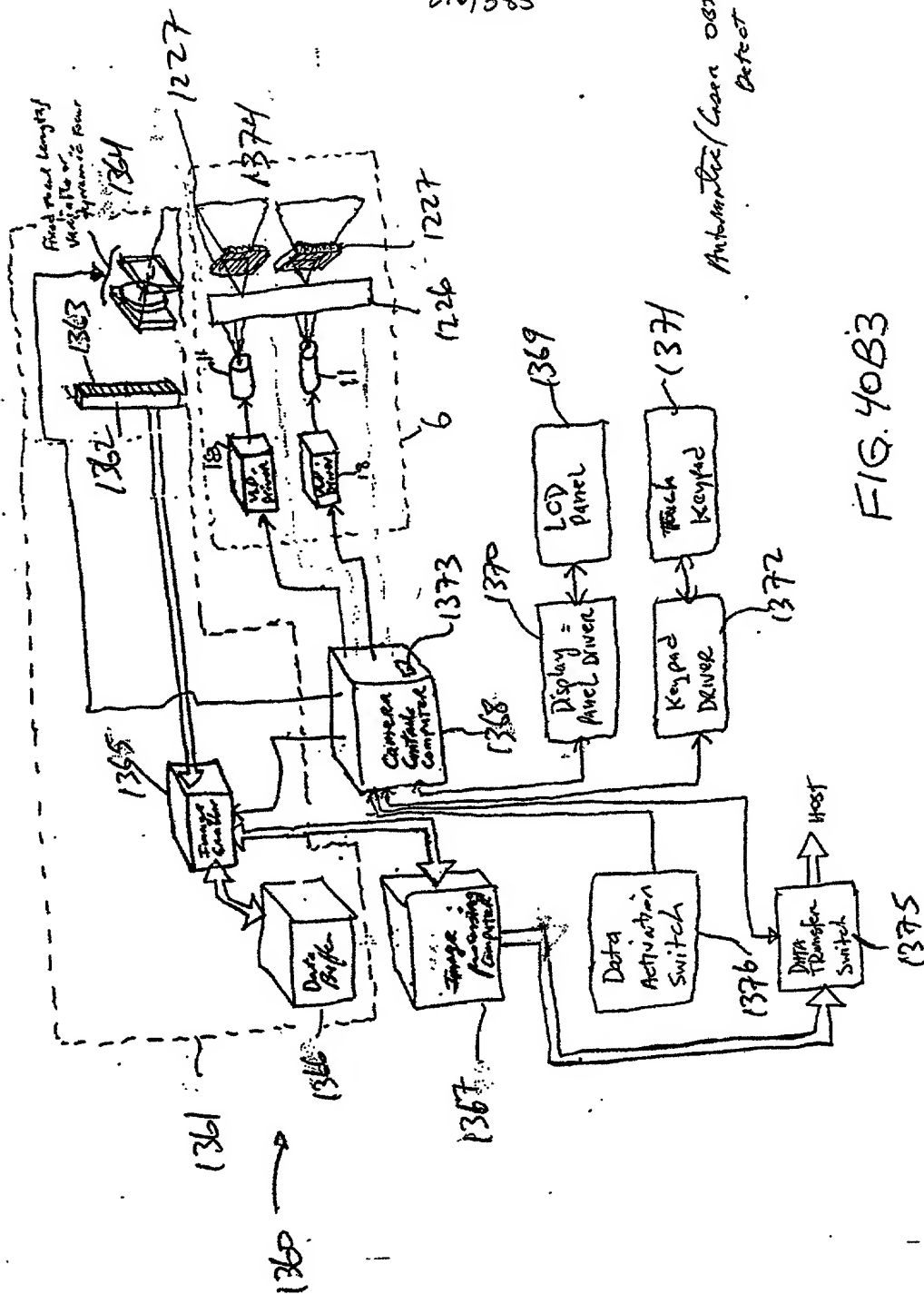


FIG. 40B2

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Automatic/Clean Object Detect

FIG. 40B3

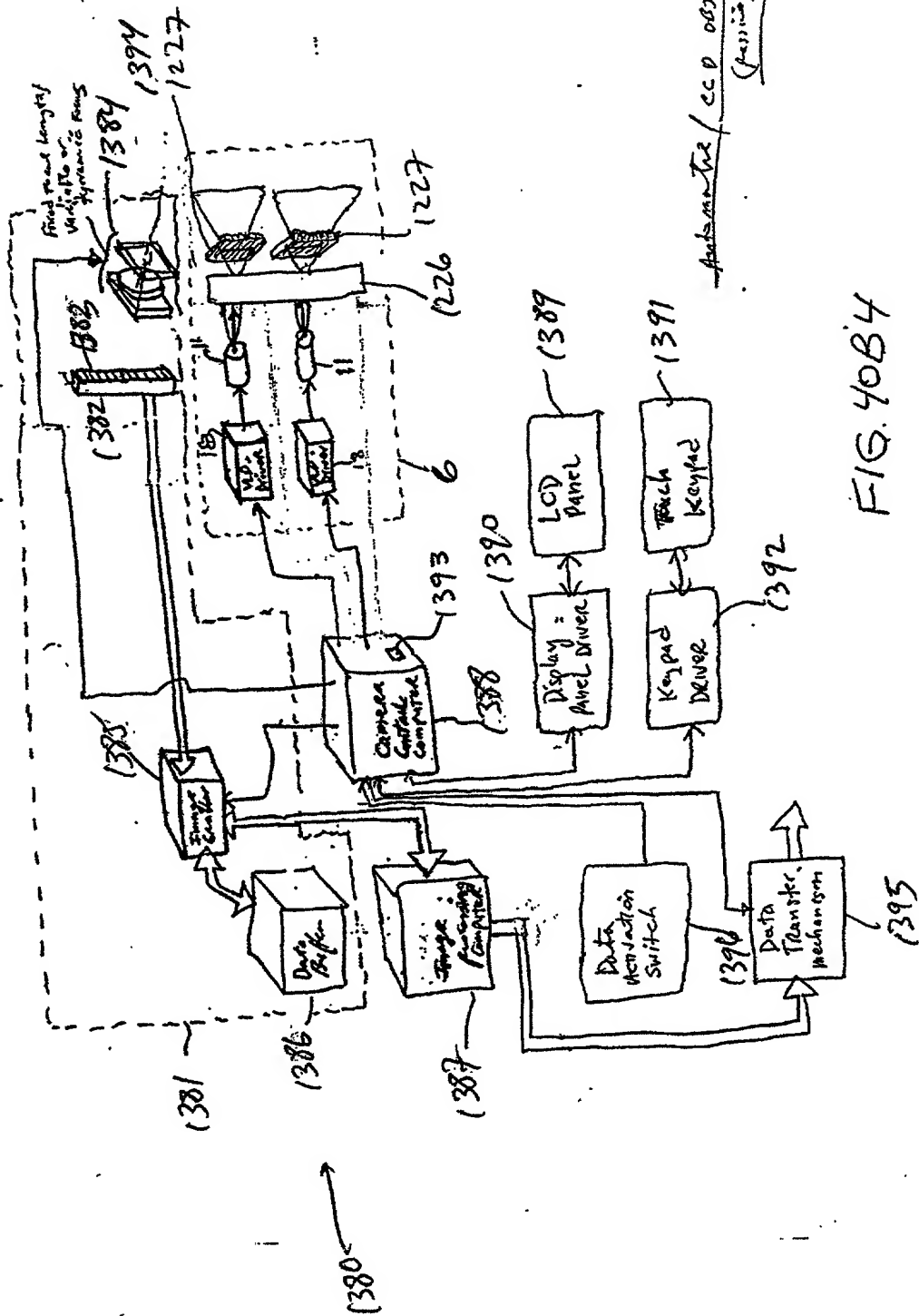


FIG. 40B4

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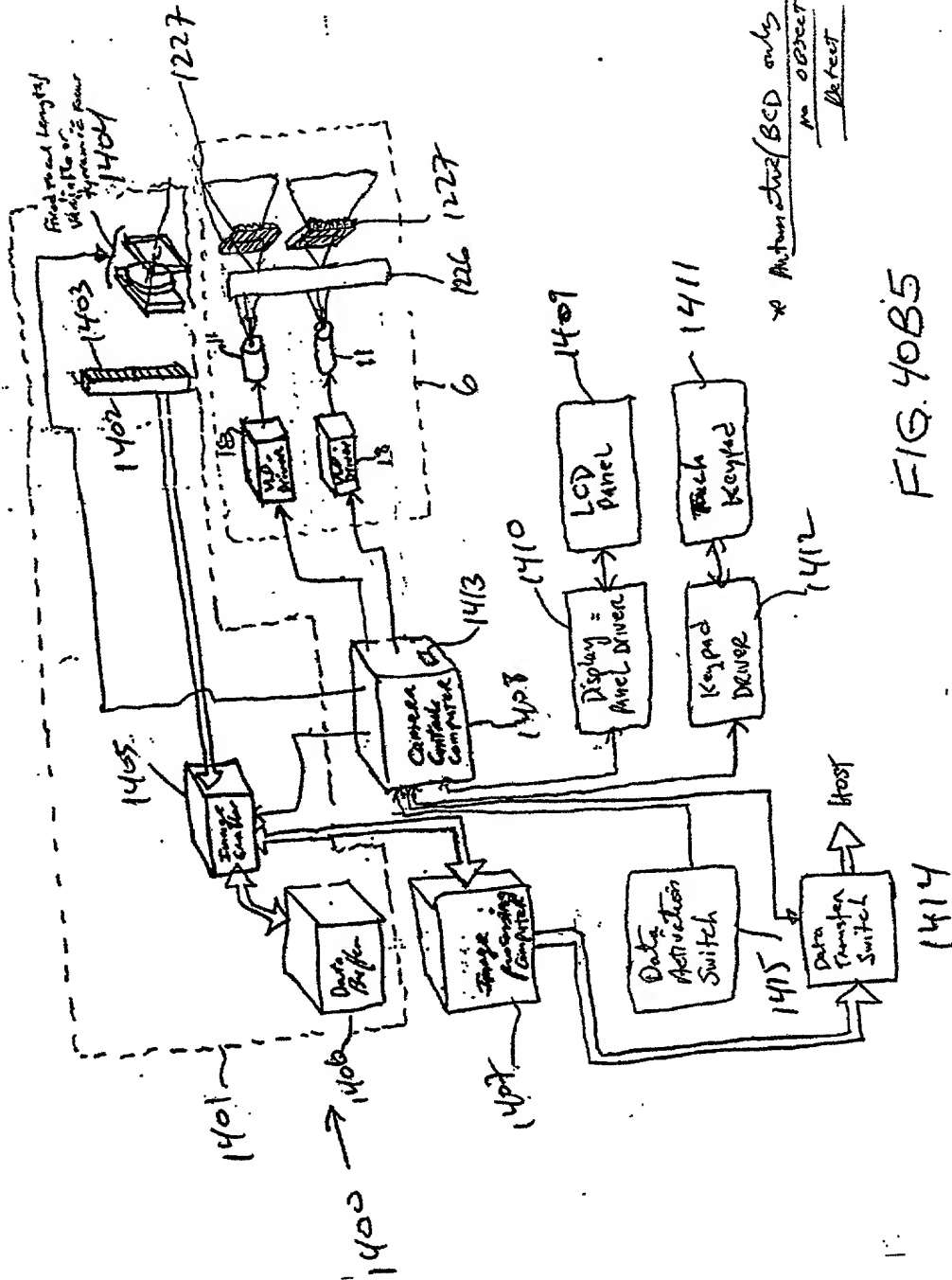
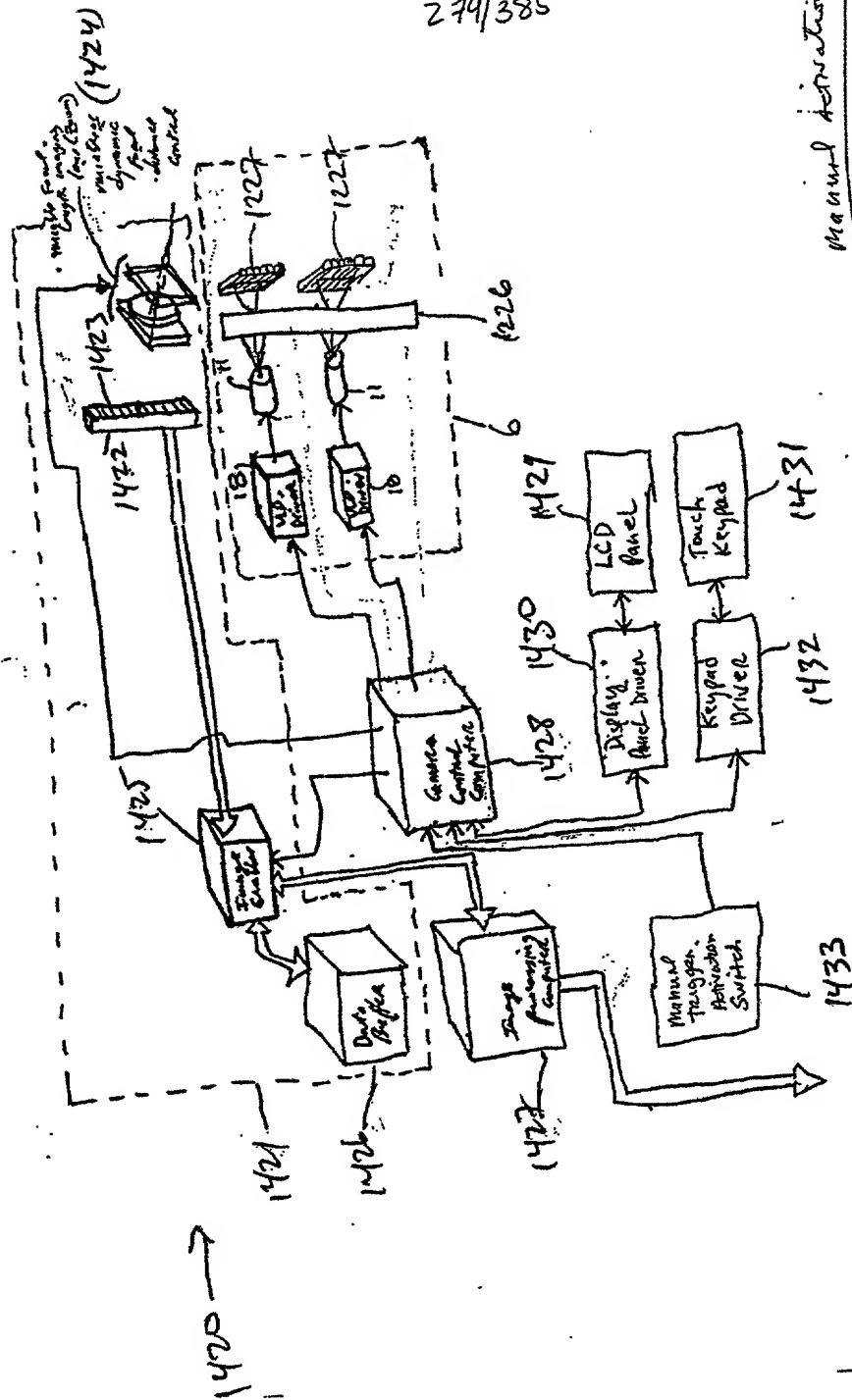


FIG. 40B5

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Manual Irrigation



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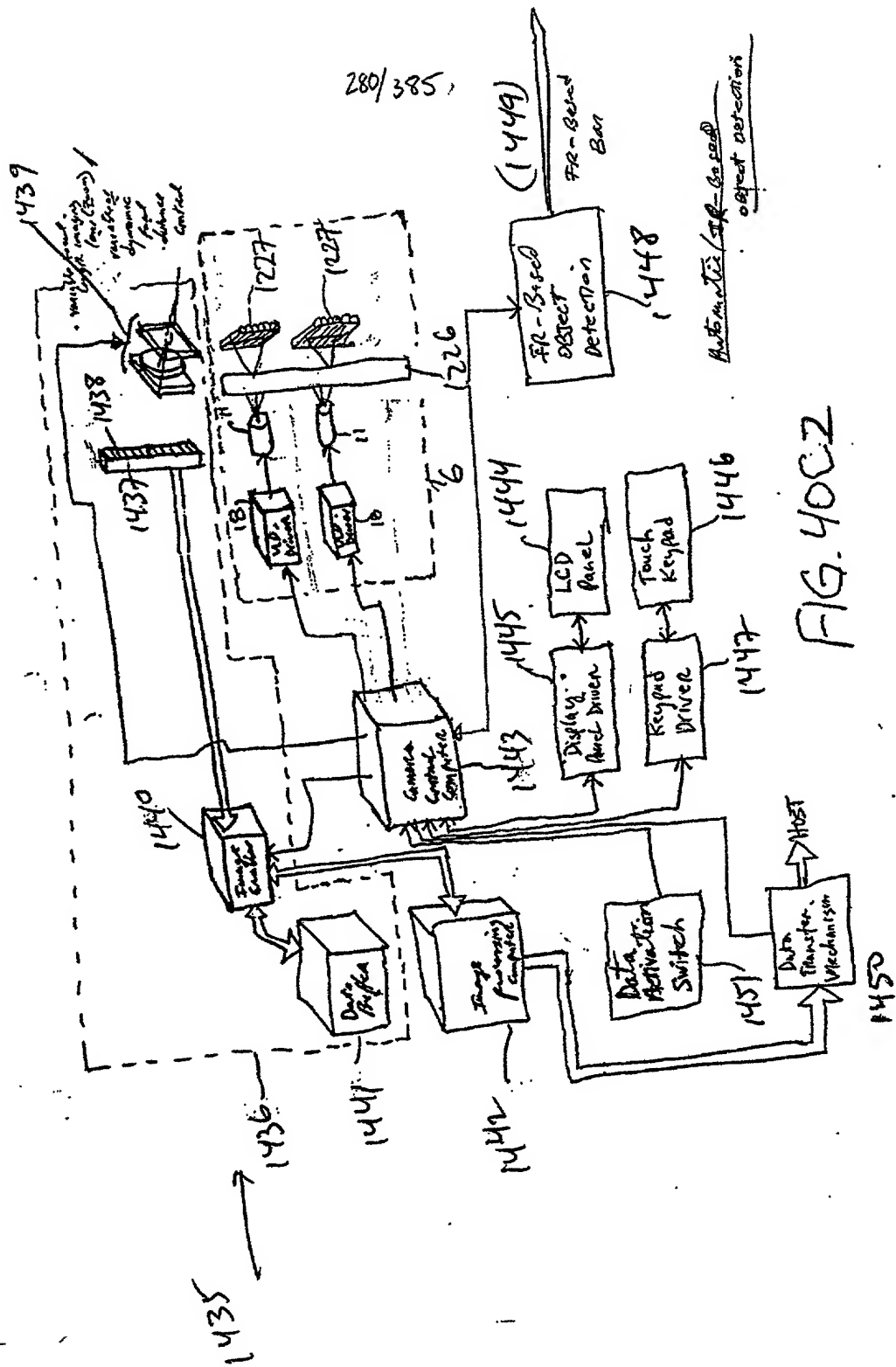
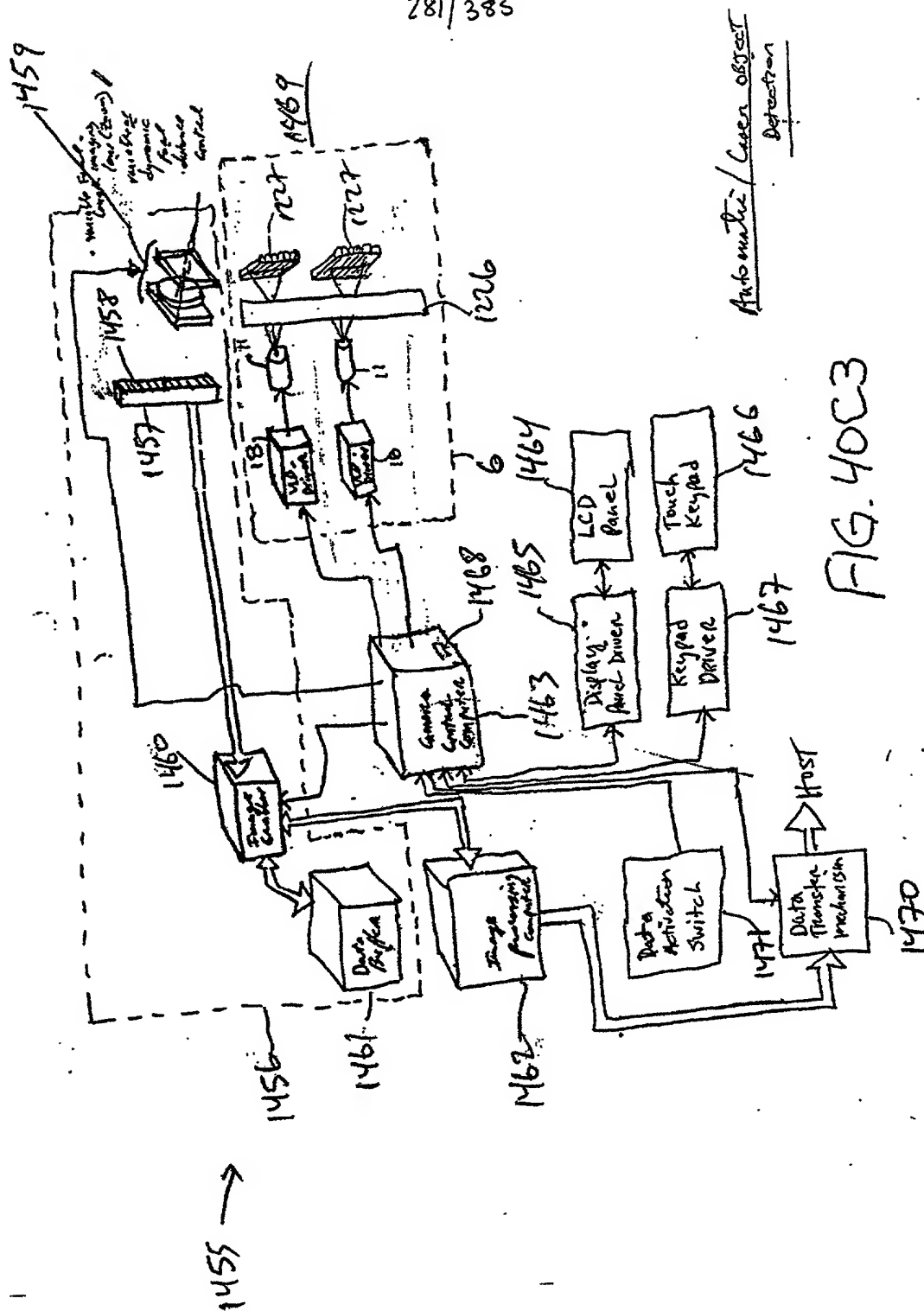
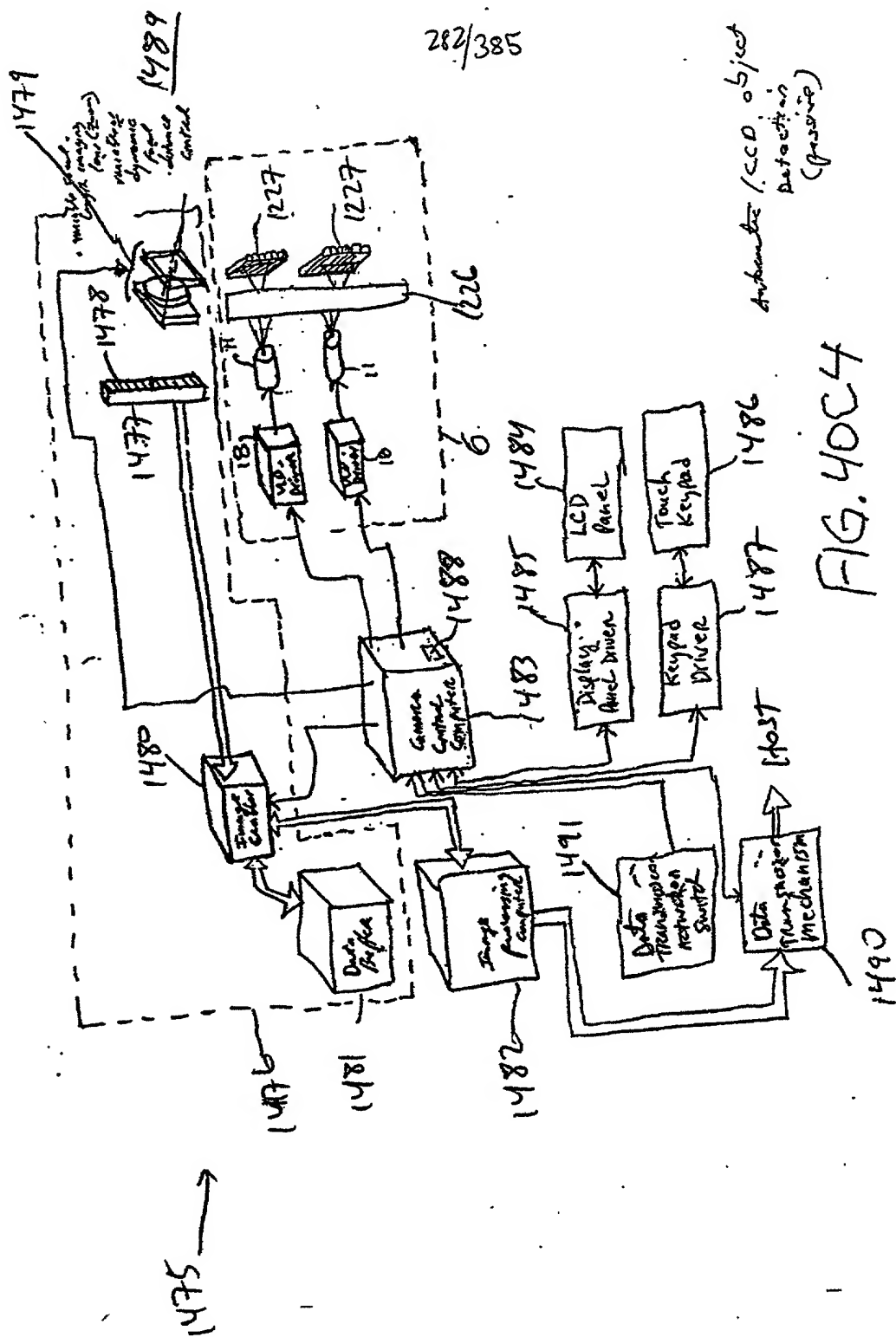


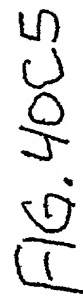
FIG. 400C2



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Automatic/BCD only
-NO object



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1-D
display
...

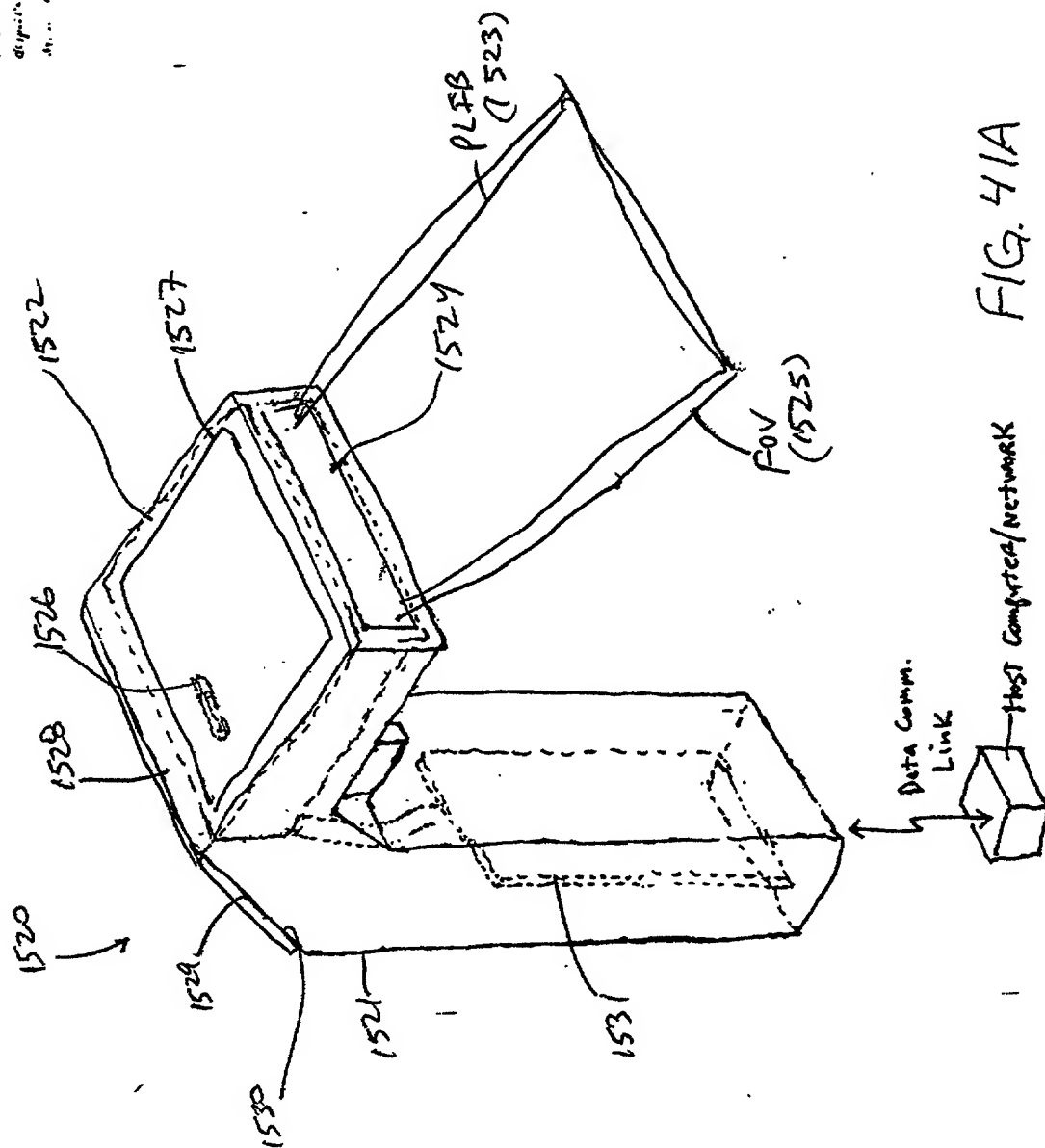


FIG. 41A

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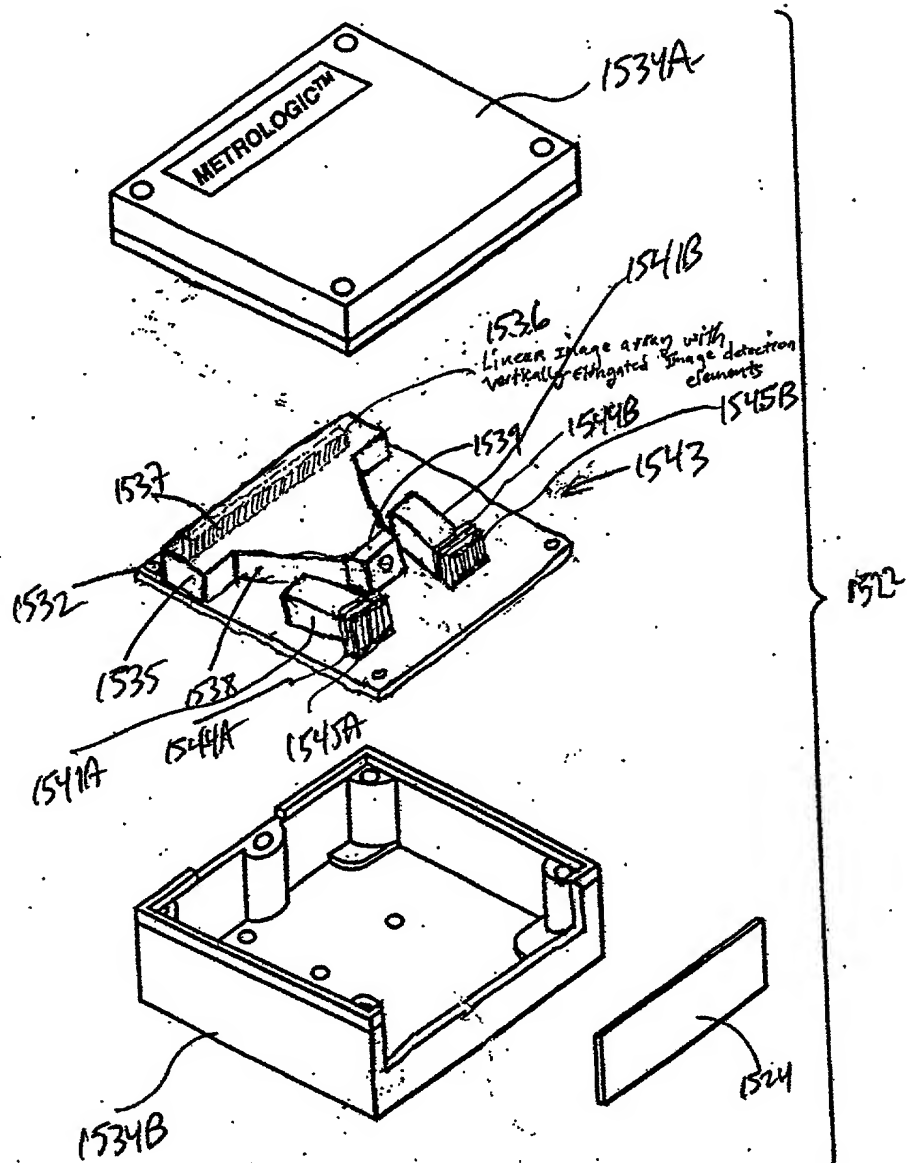


FIG. 41B

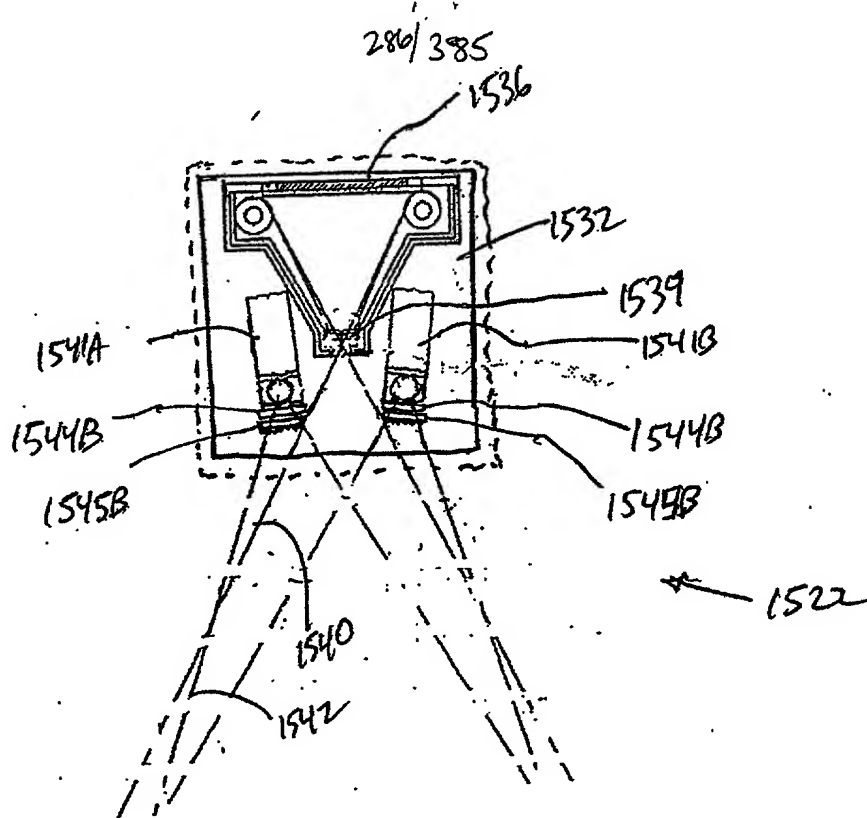


FIG. 41C

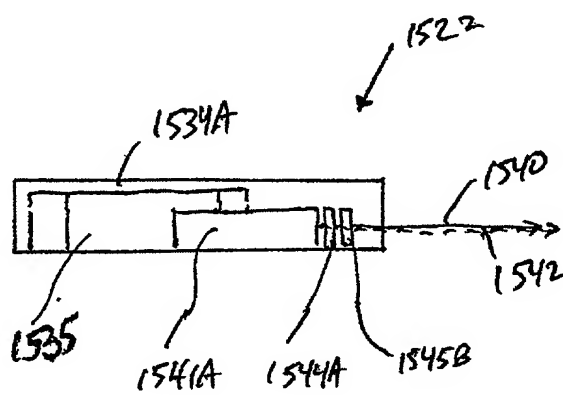


FIG. 41D

2050000 6666000

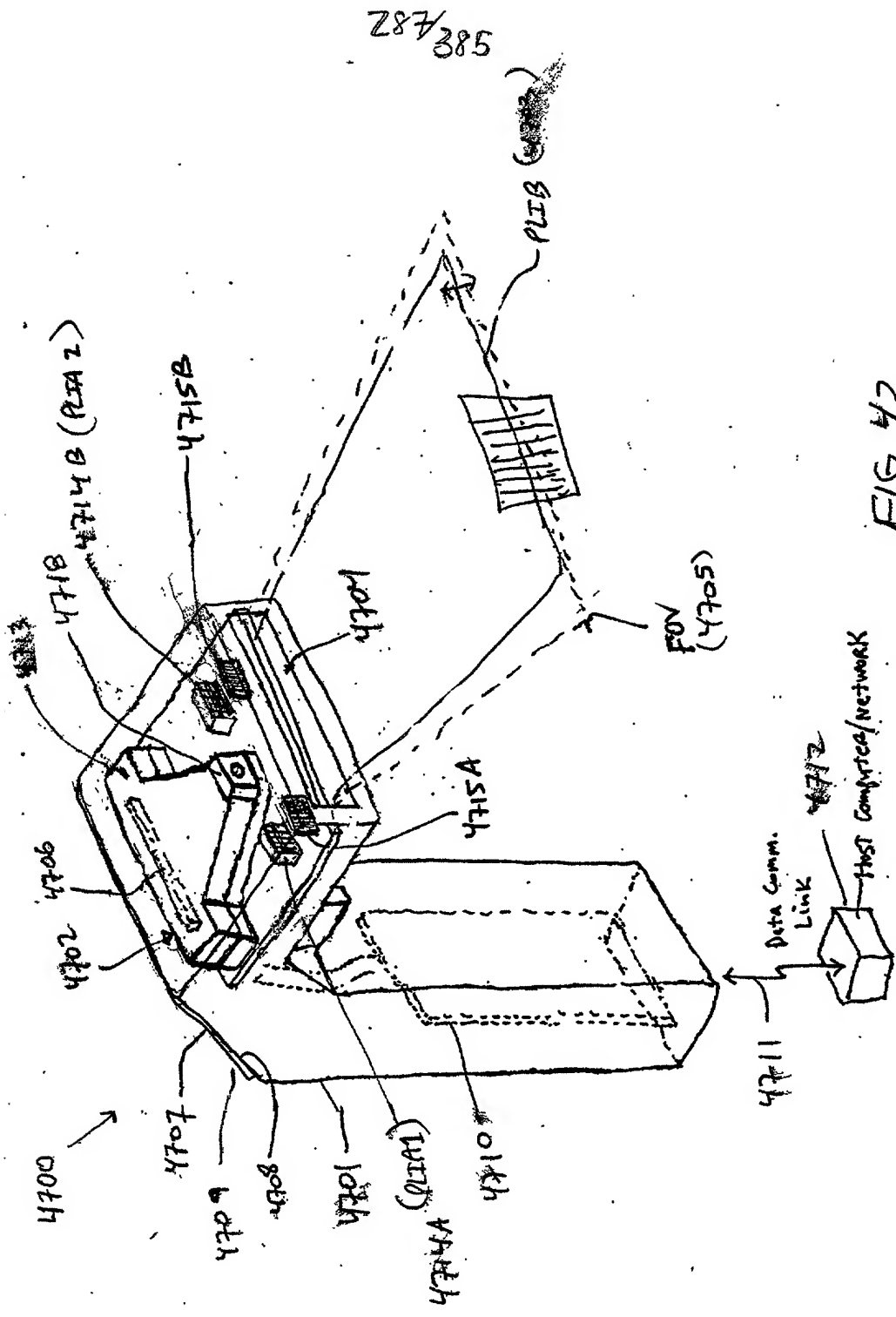


FIG 42

1. D
depression;
... ..



Host Computer/Network

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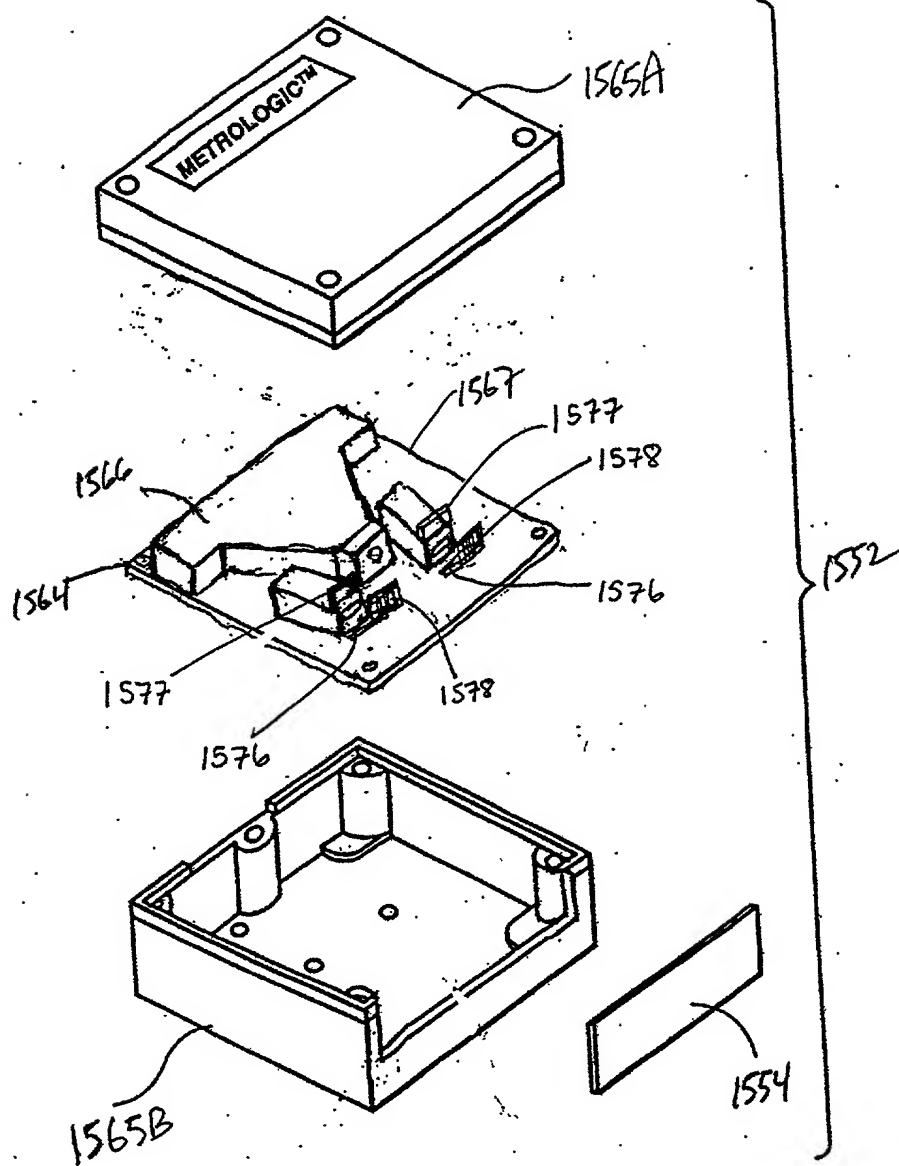


FIG. 42B

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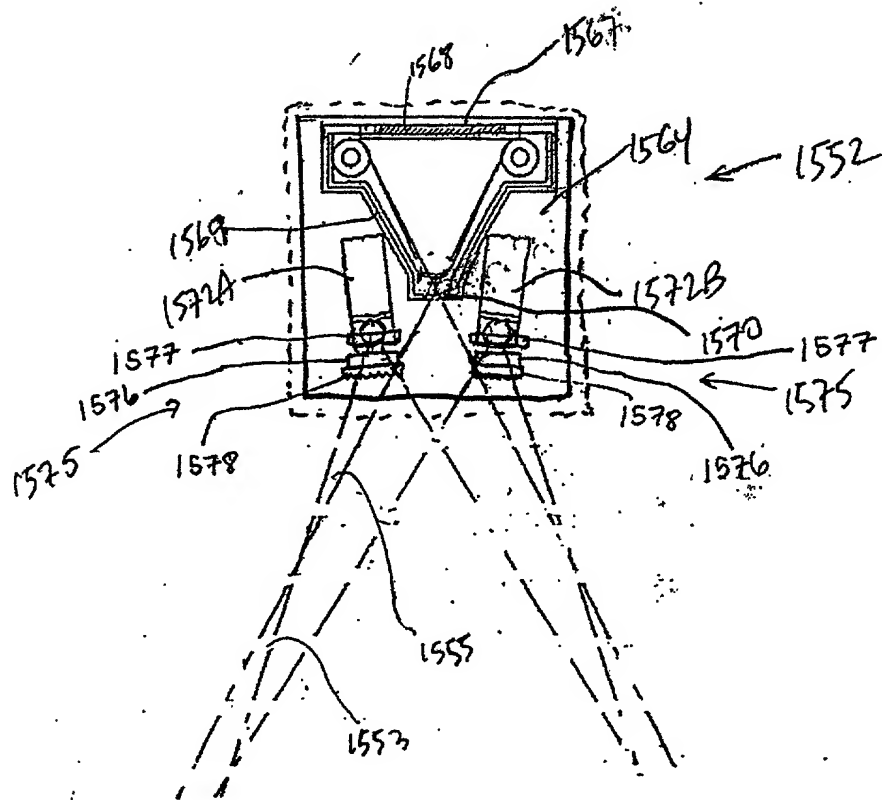


FIG. 42C

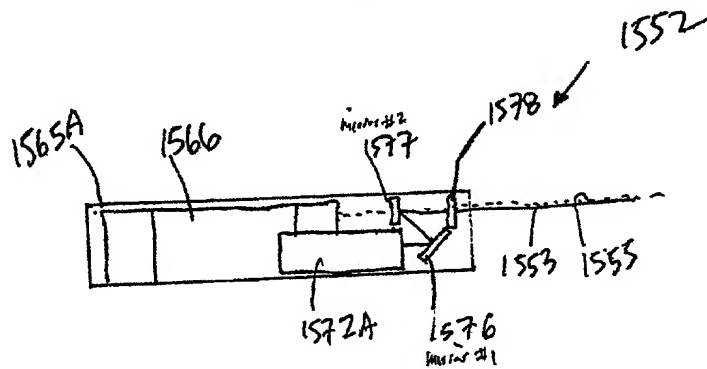


FIG. 42D

1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378</
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FIG. 43A

2025 RELEASE UNDER E.O. 14176

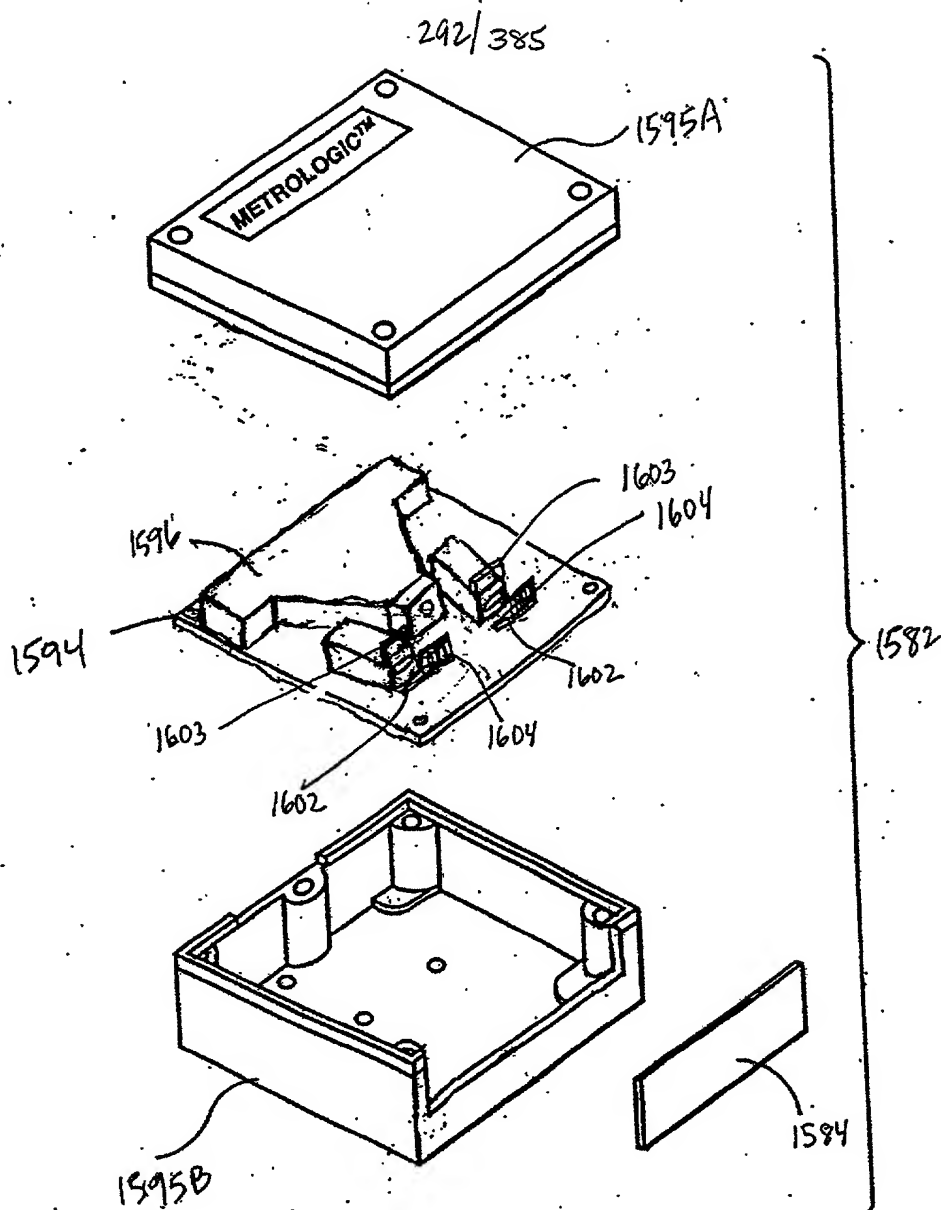


FIG. 43B

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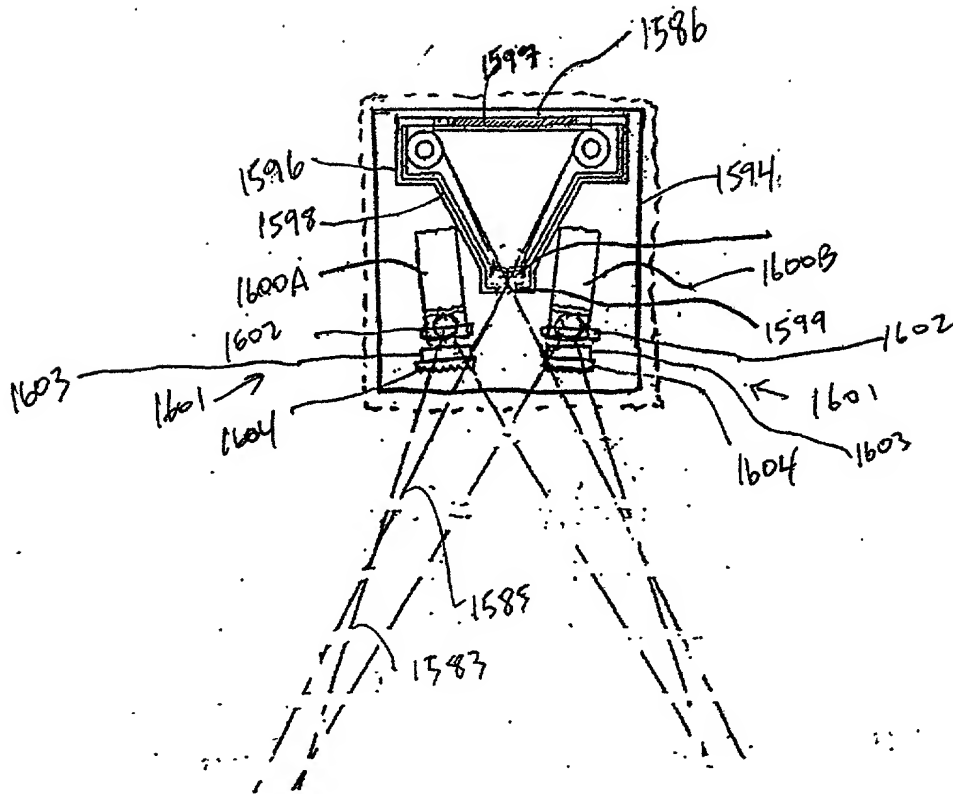


FIG. 43C

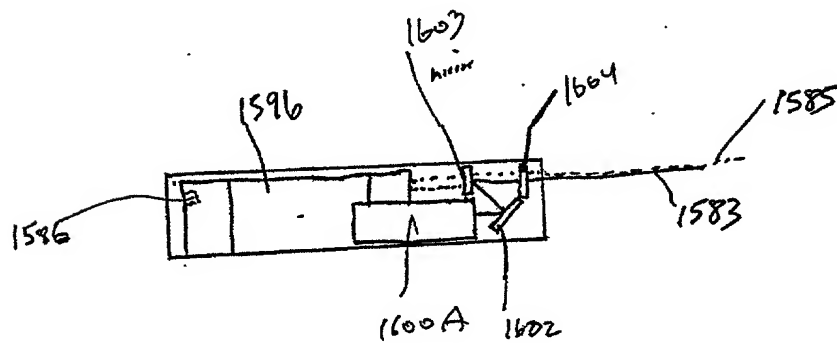


FIG. 43D

20250308 16:55:44

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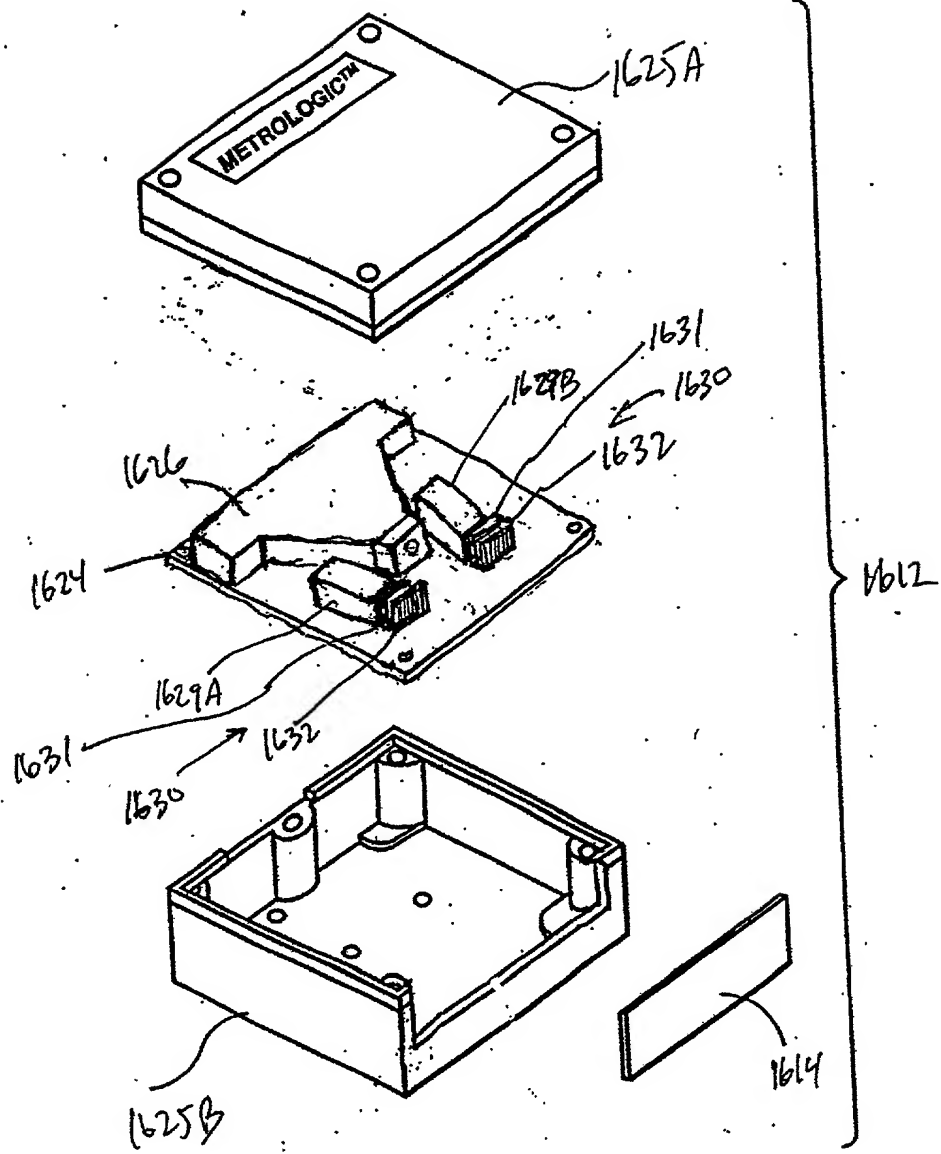


FIG. 44B

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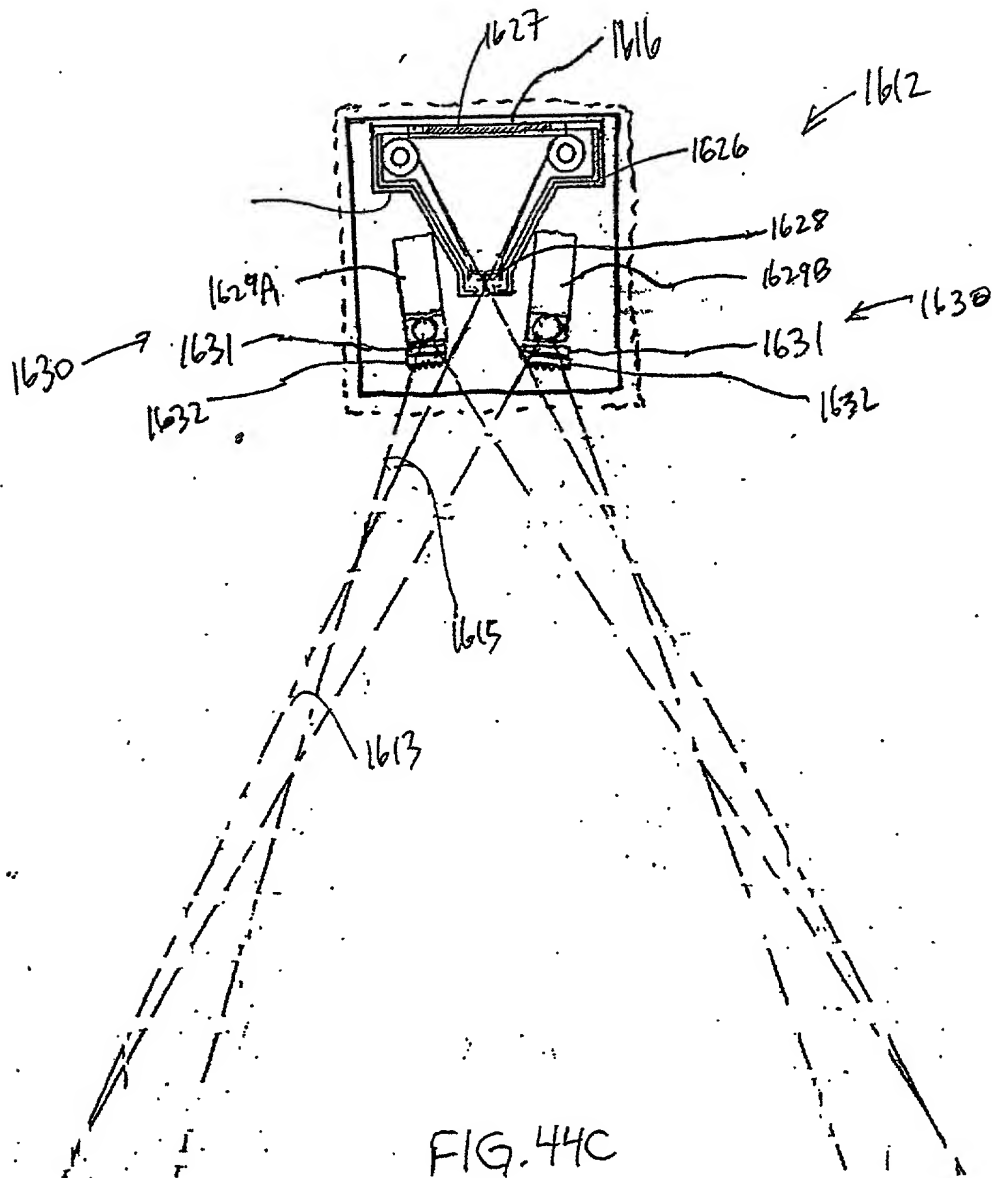
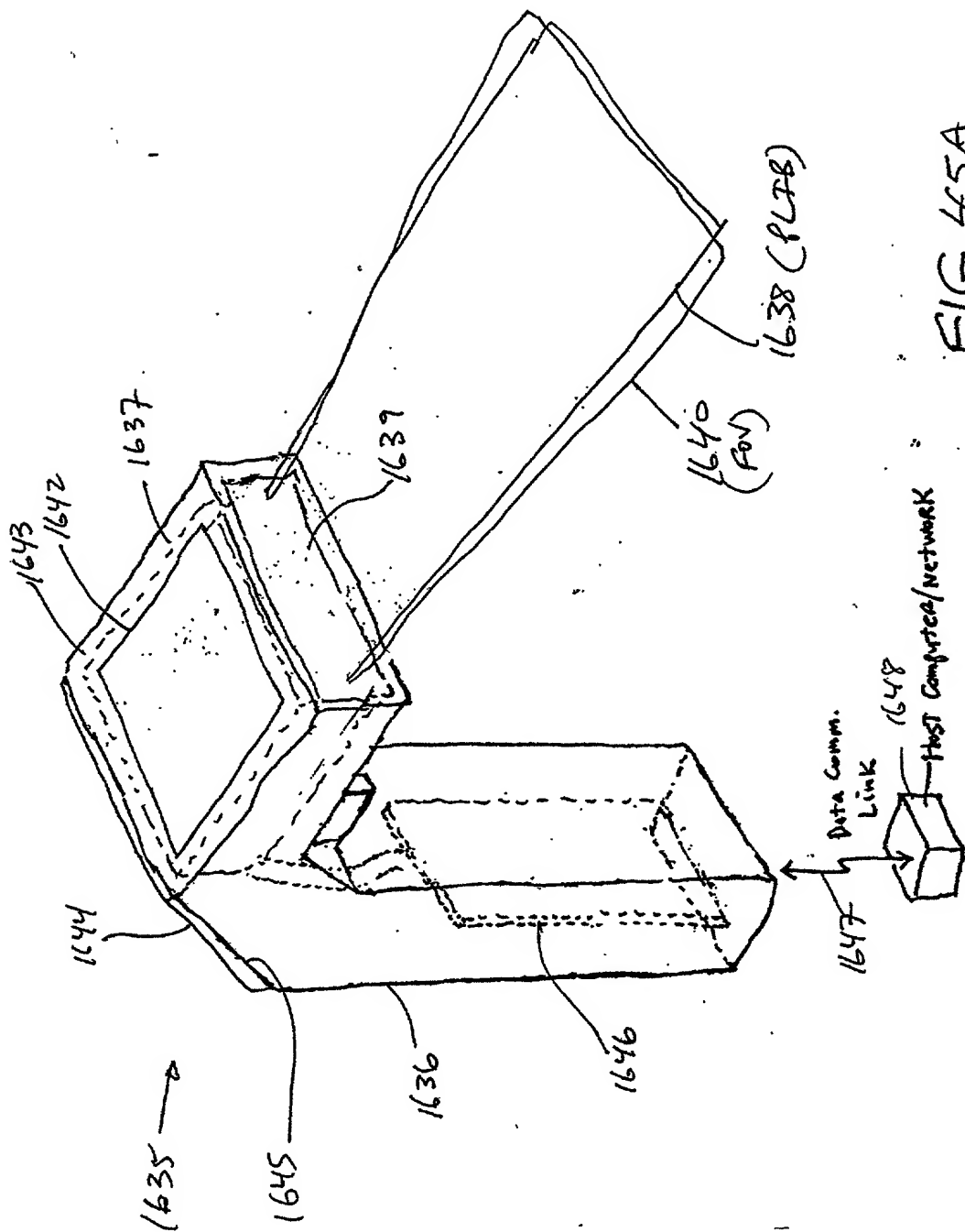


FIG. 44C

[illegible]

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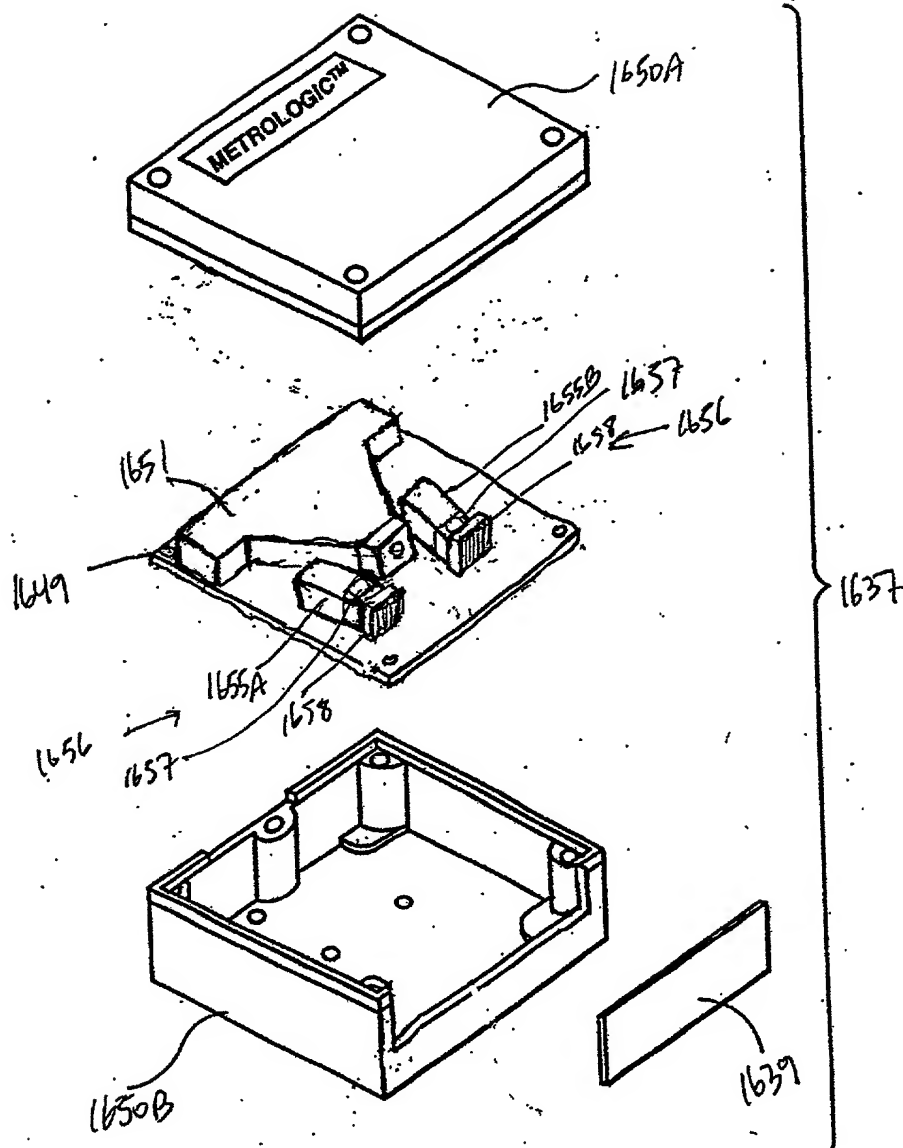


FIG. 45B

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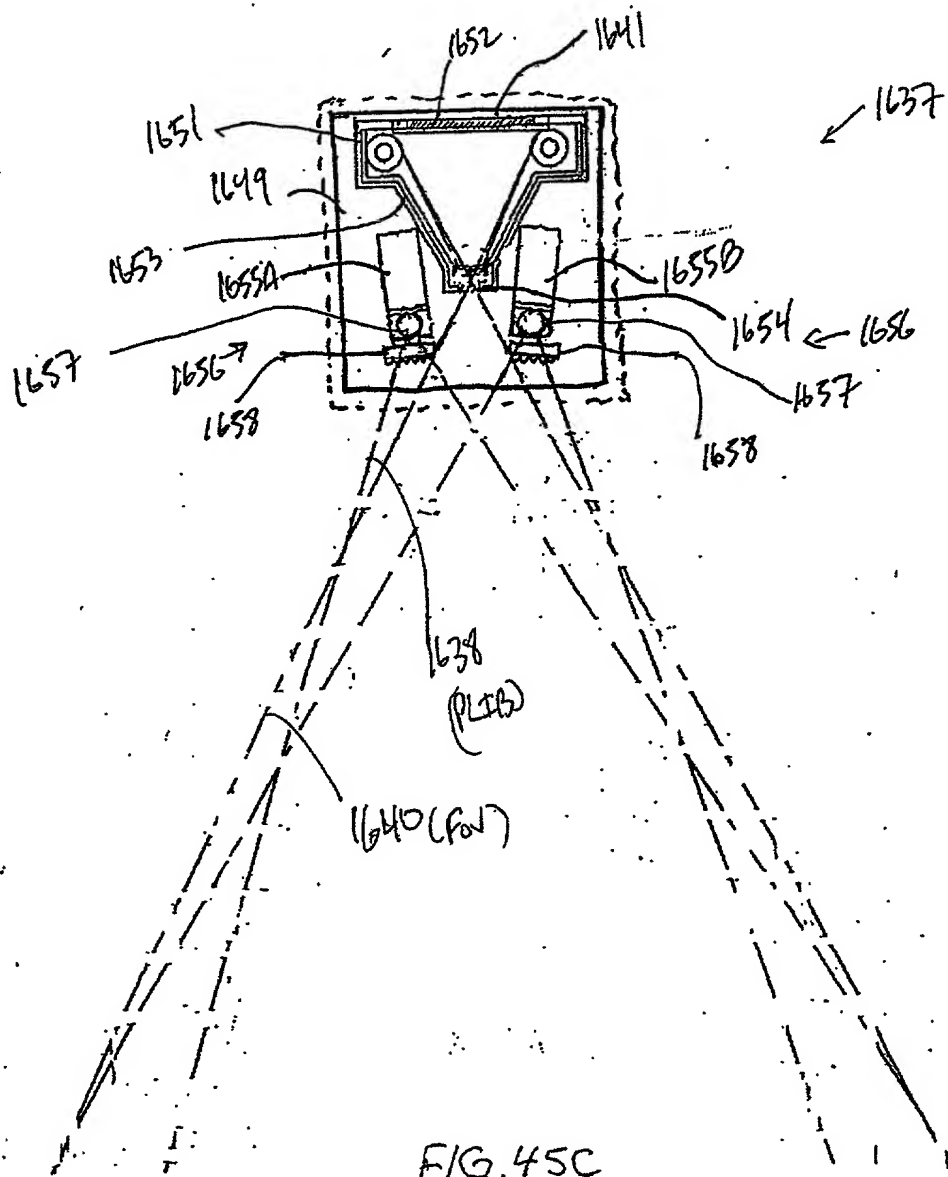


FIG. 45C

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1-D
display
...

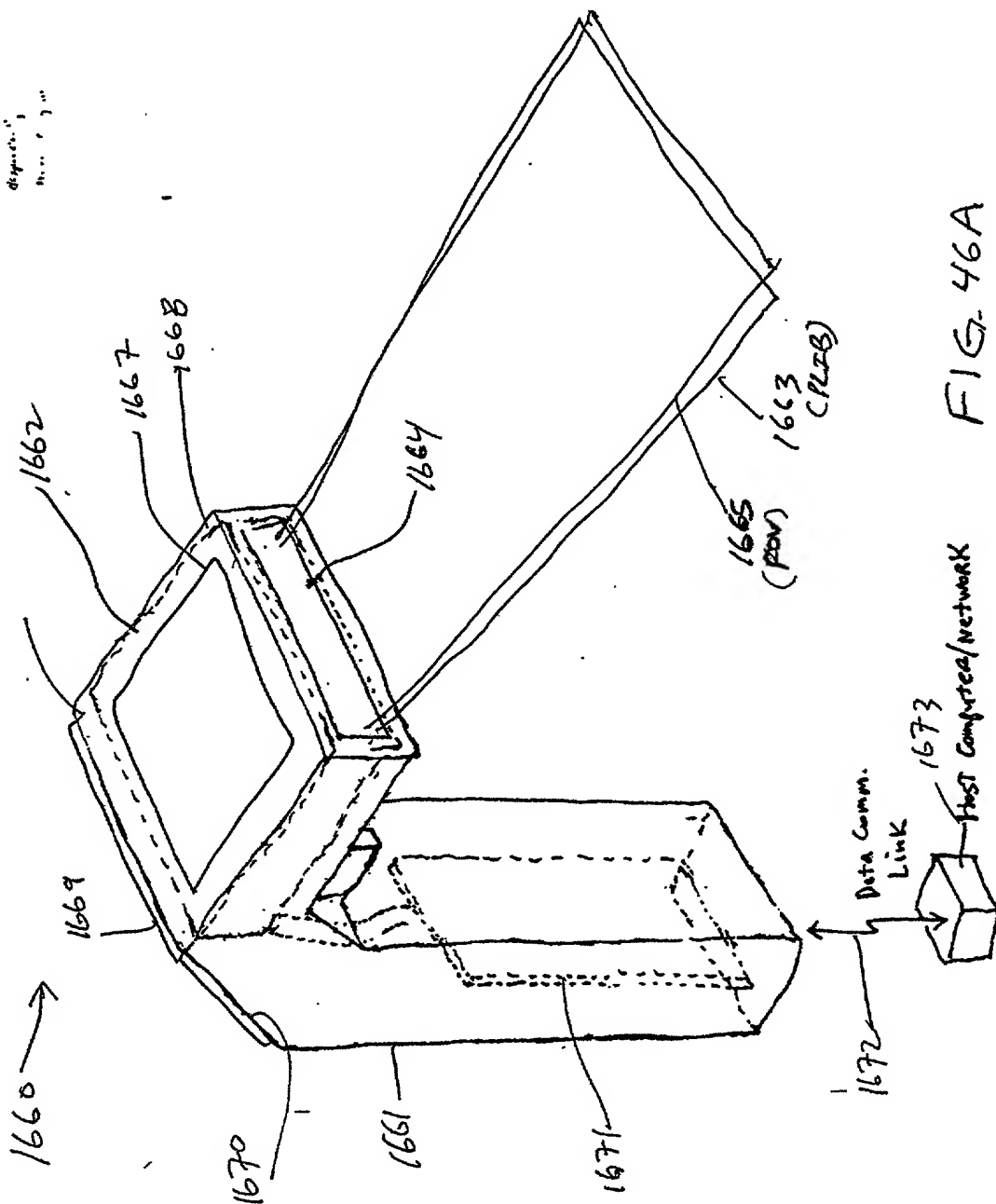


FIG. 46A

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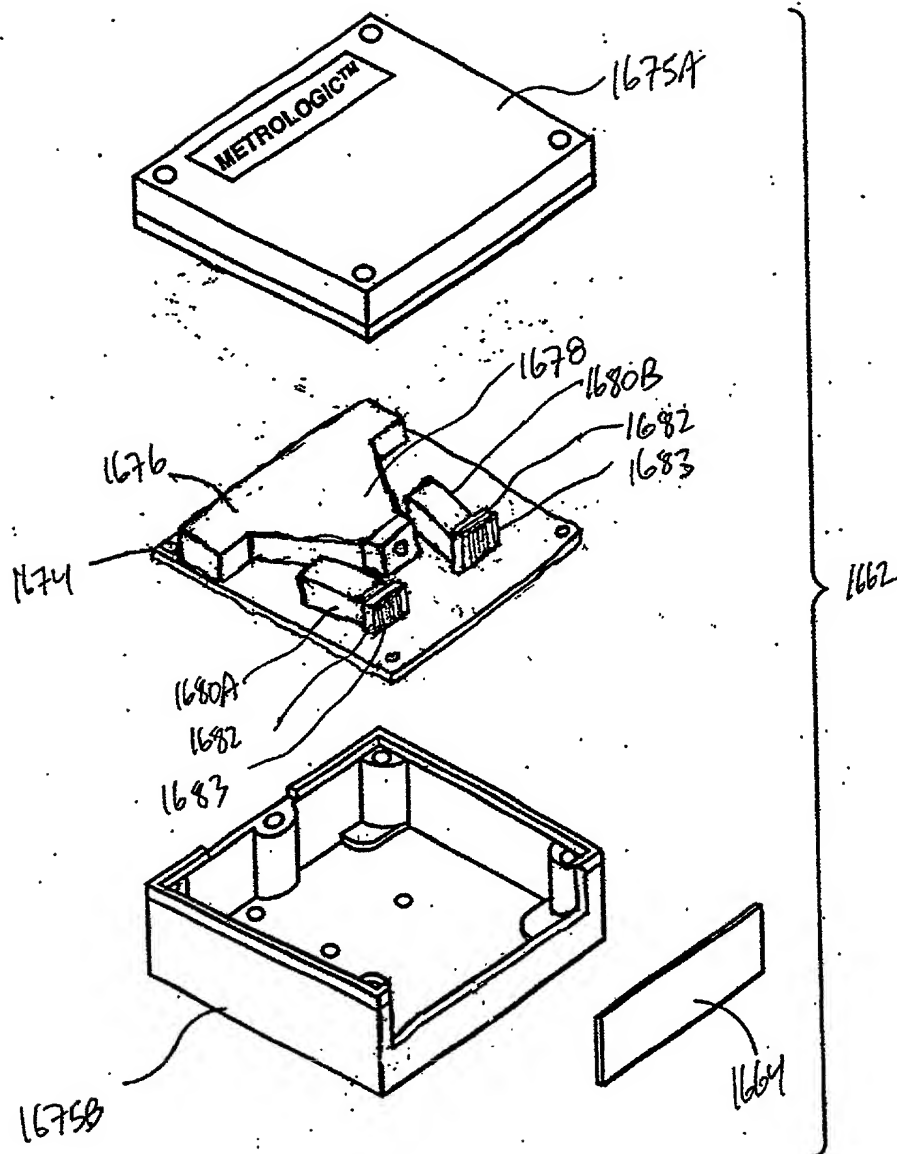


FIG. 46B

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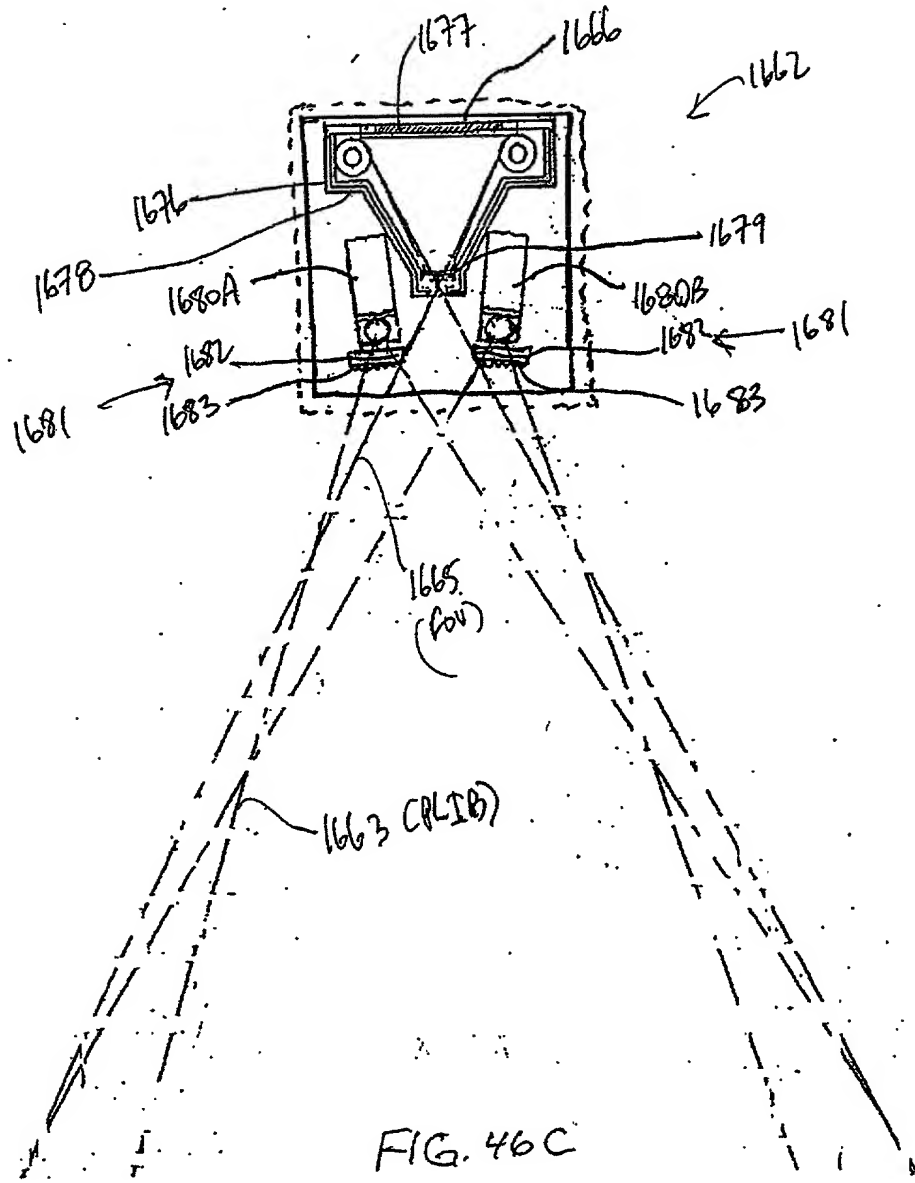


FIG. 46C

1-0
d: 10-10
10-10

1693
(PLIB)



Host Computer/Network

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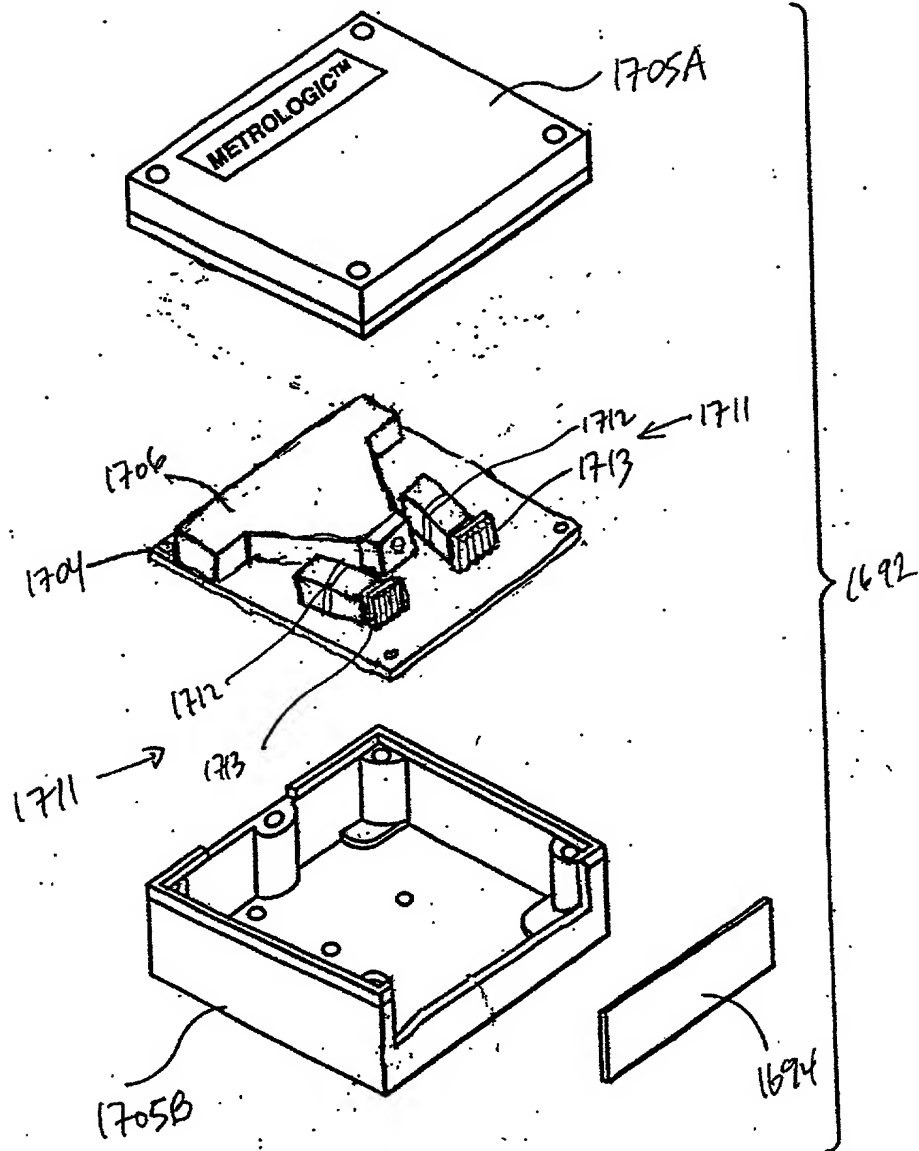


FIG. 47B

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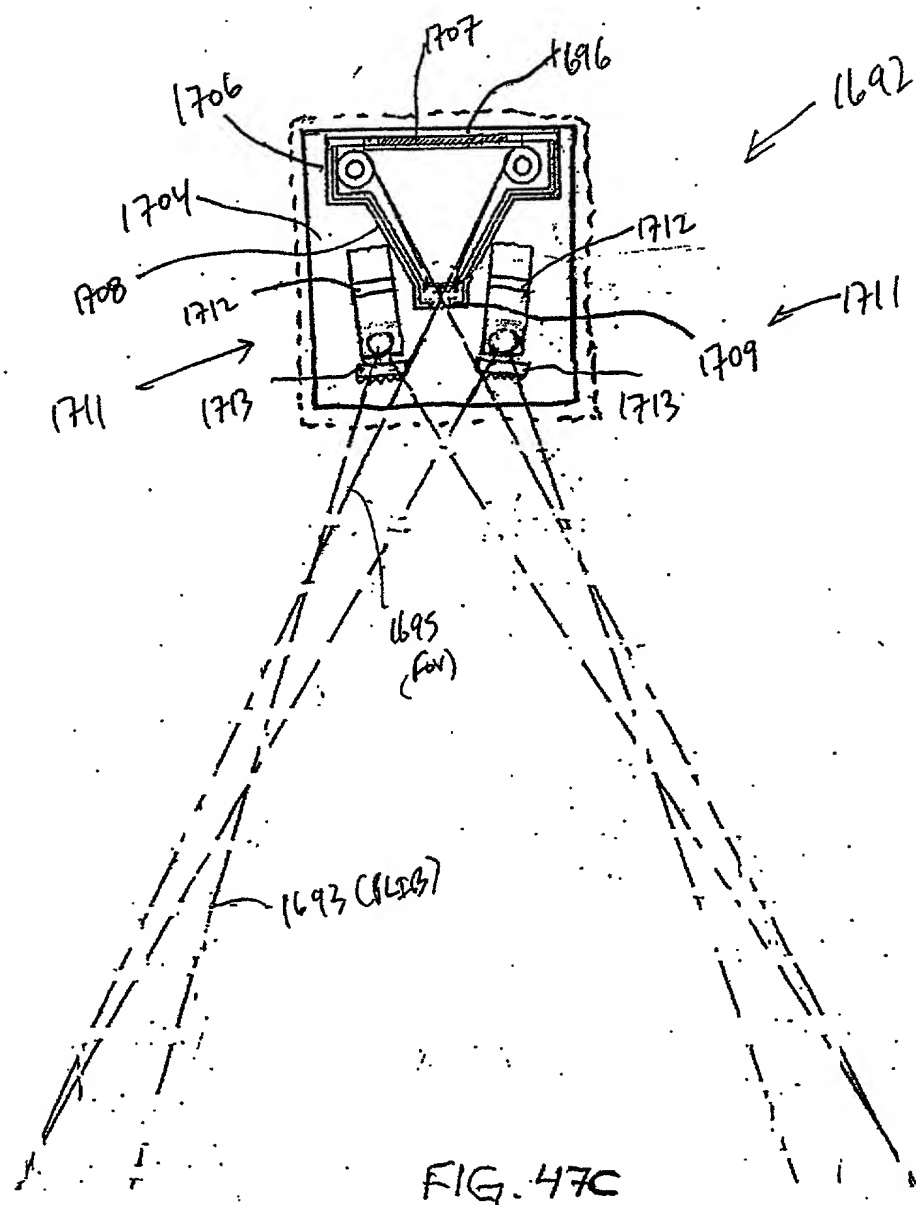


FIG. 47C

20250101 08:46:00

2025 RELEASE UNDER E.O. 14176

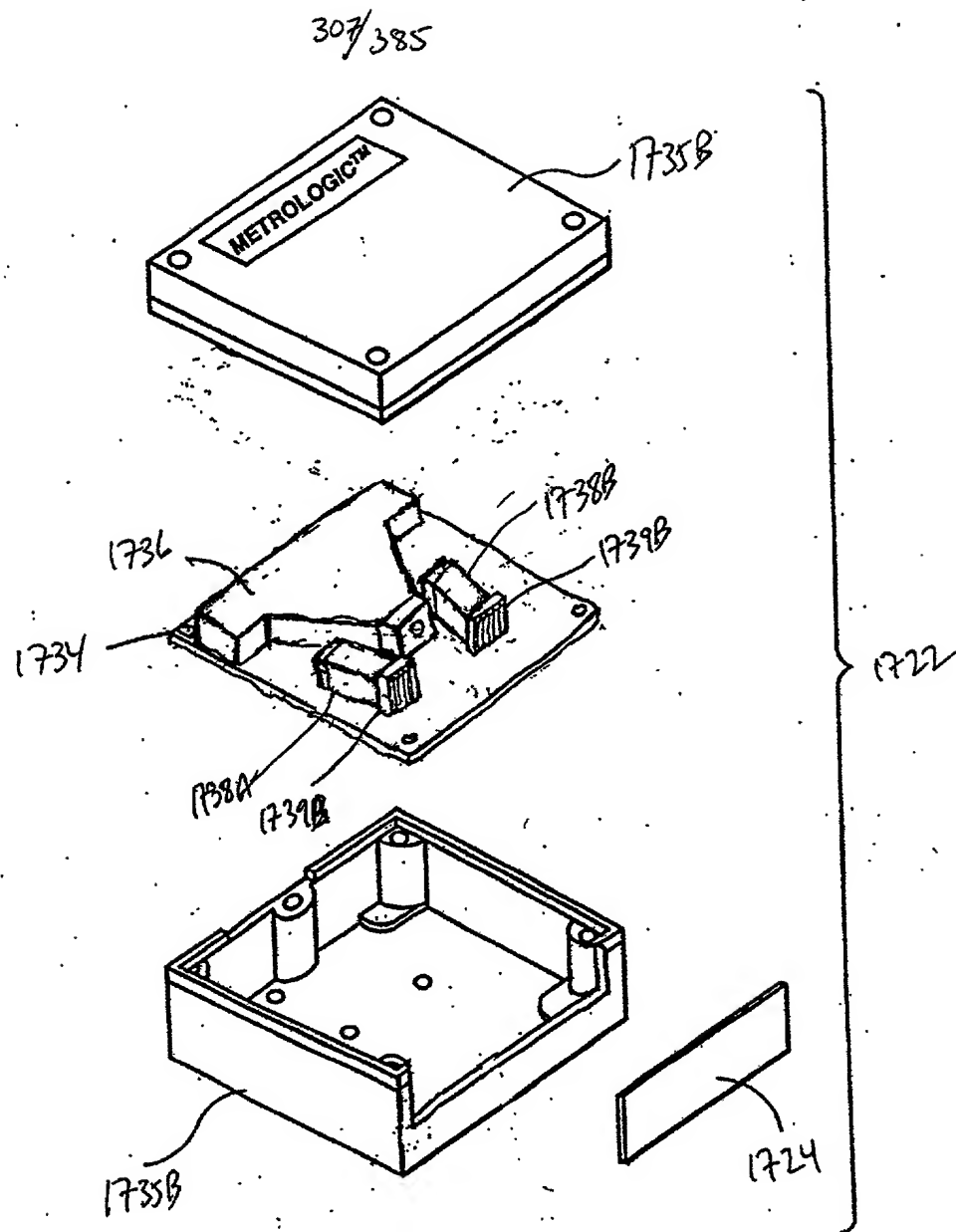
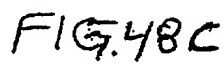
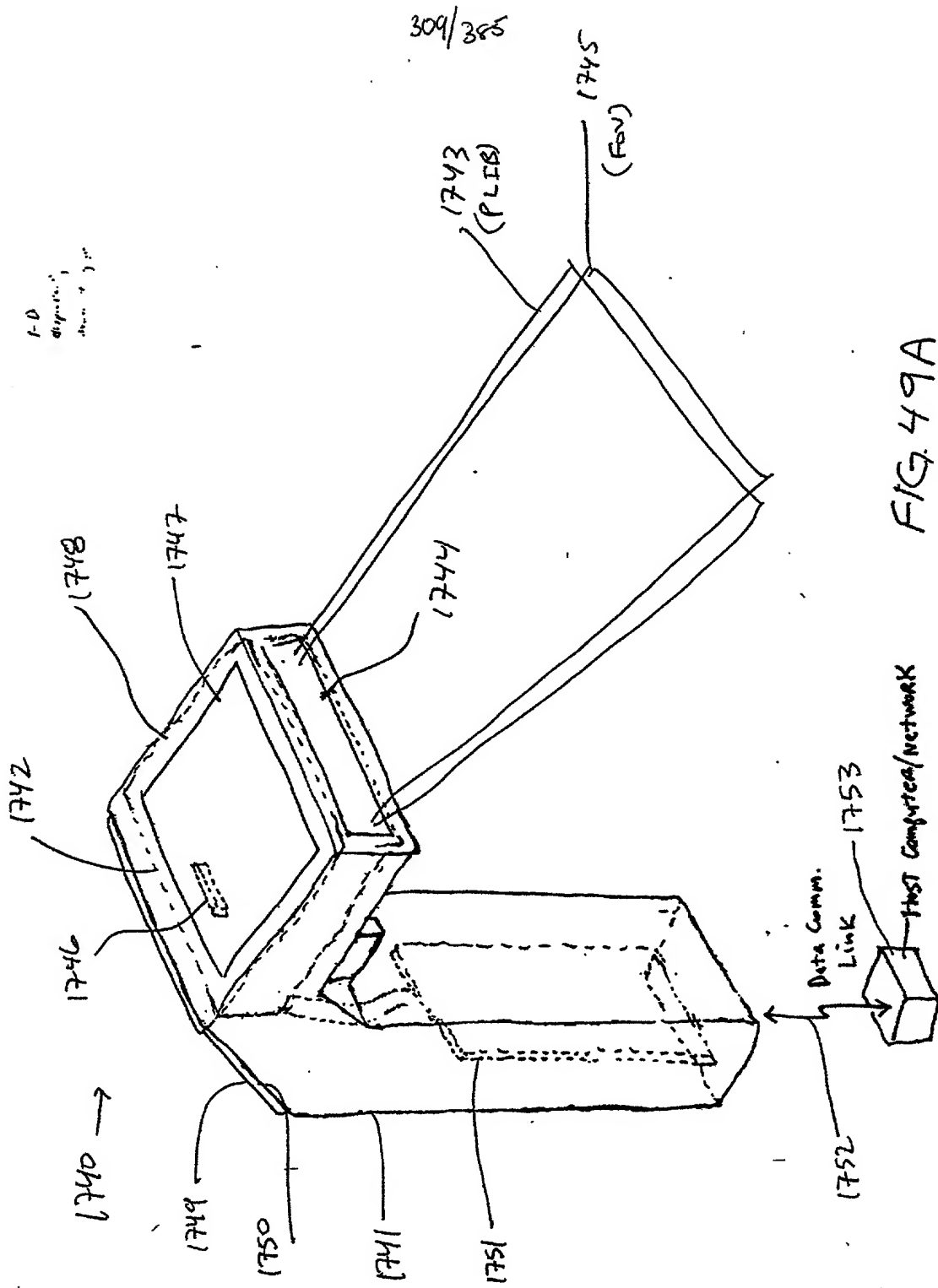


FIG. 48B

[illegible]



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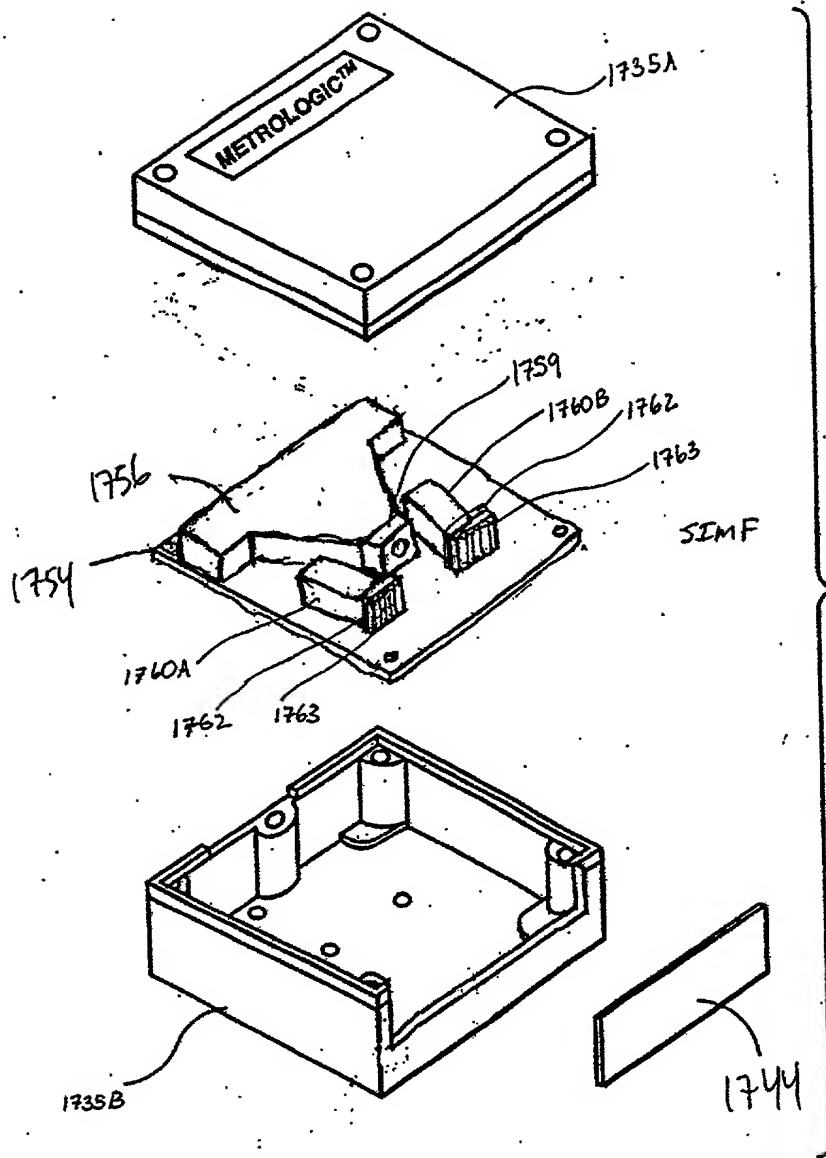


FIG. 49B

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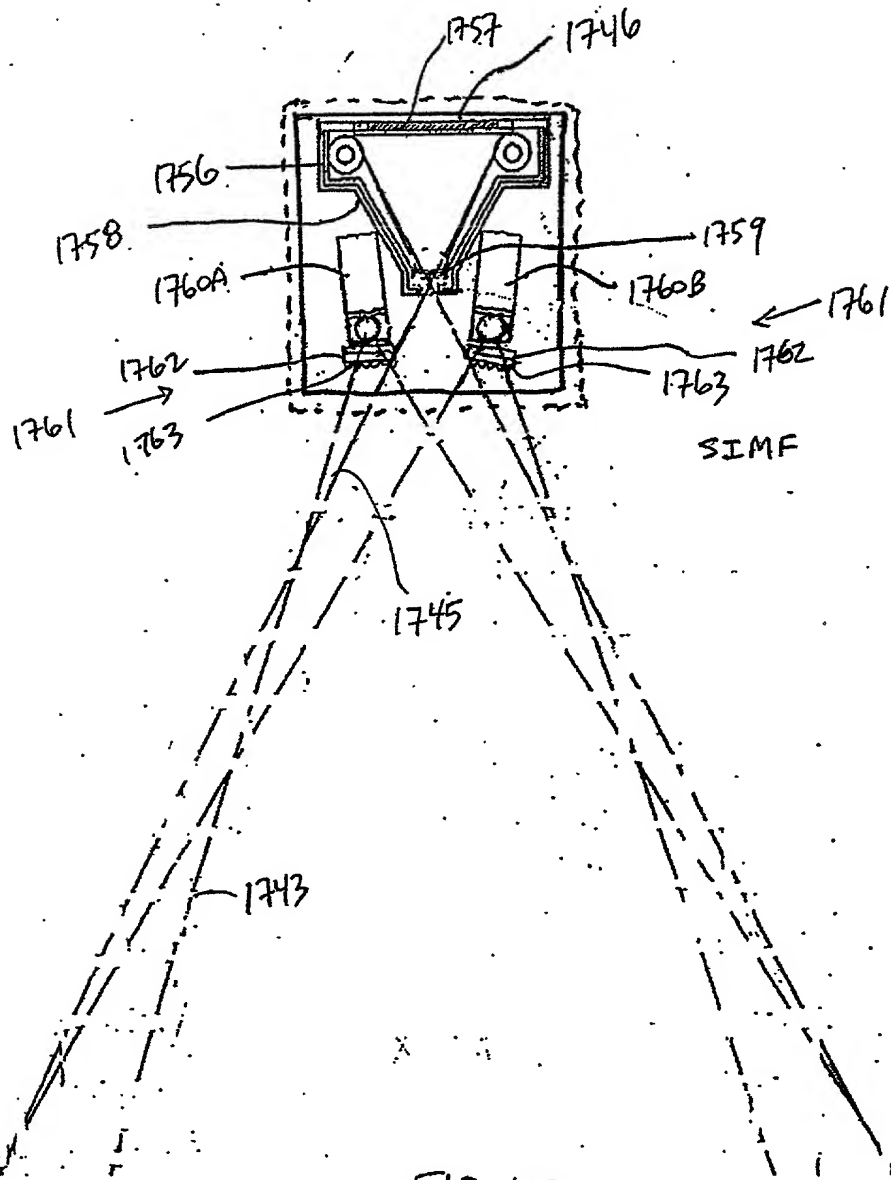


FIG. 49C

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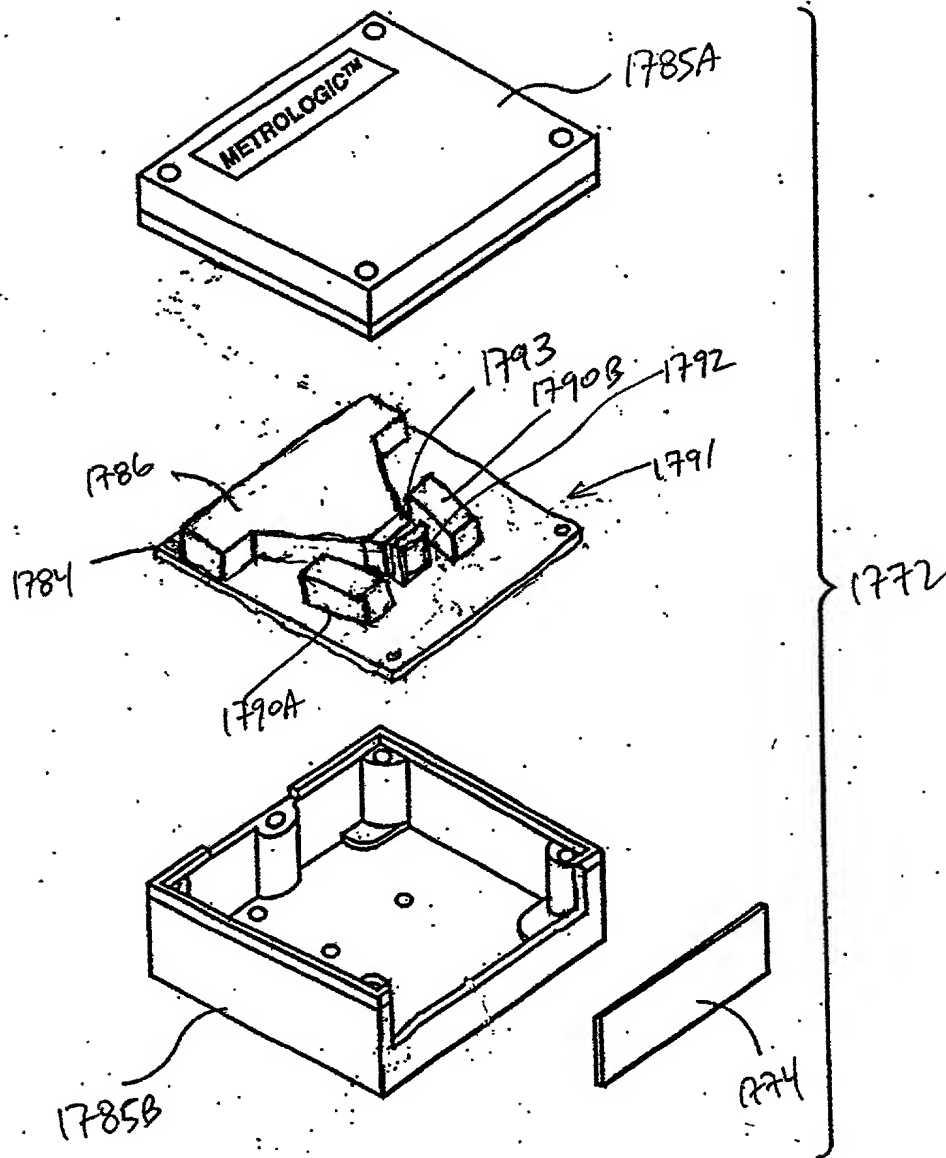


FIG. 50B

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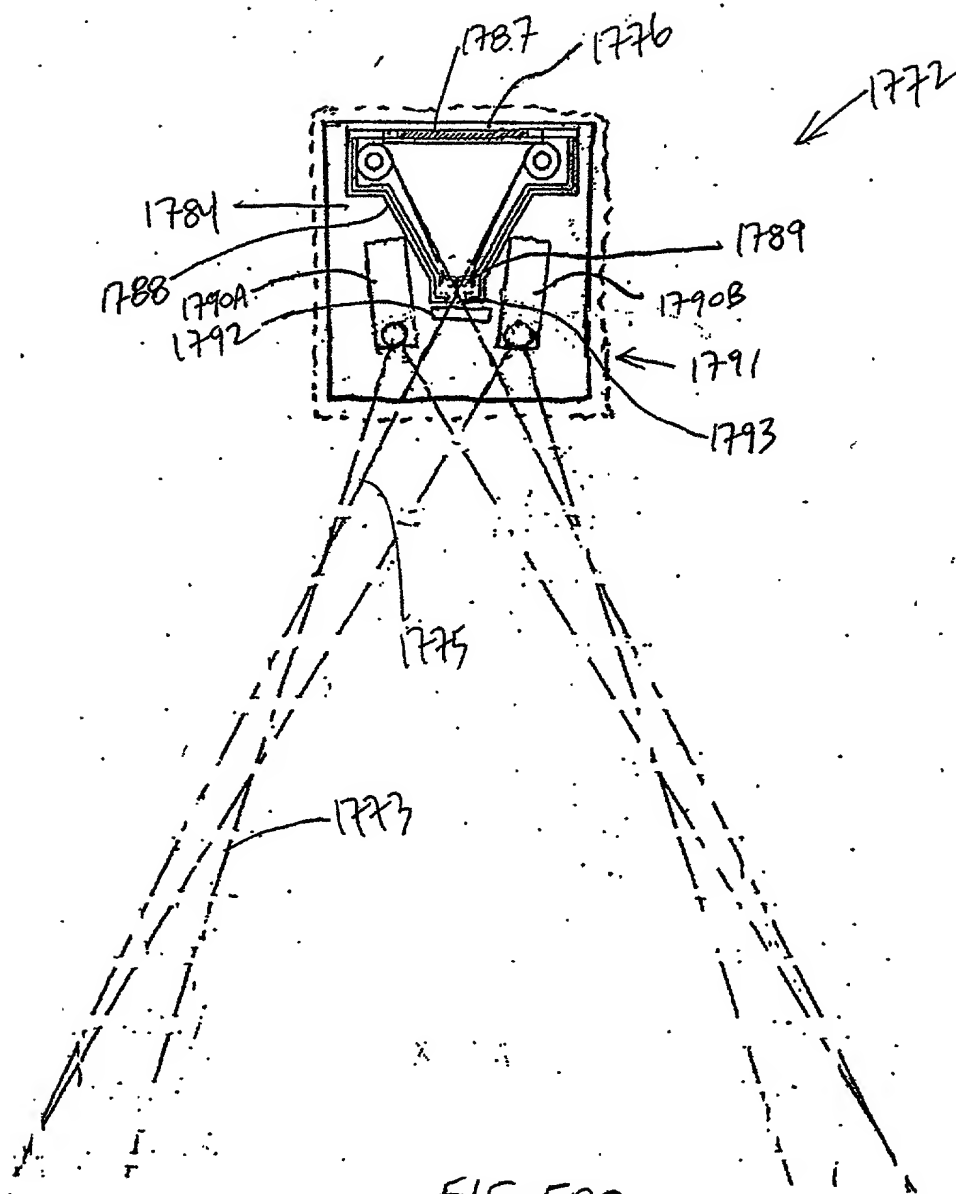


FIG. 50C

2025 RELEASE UNDER E.O. 14176

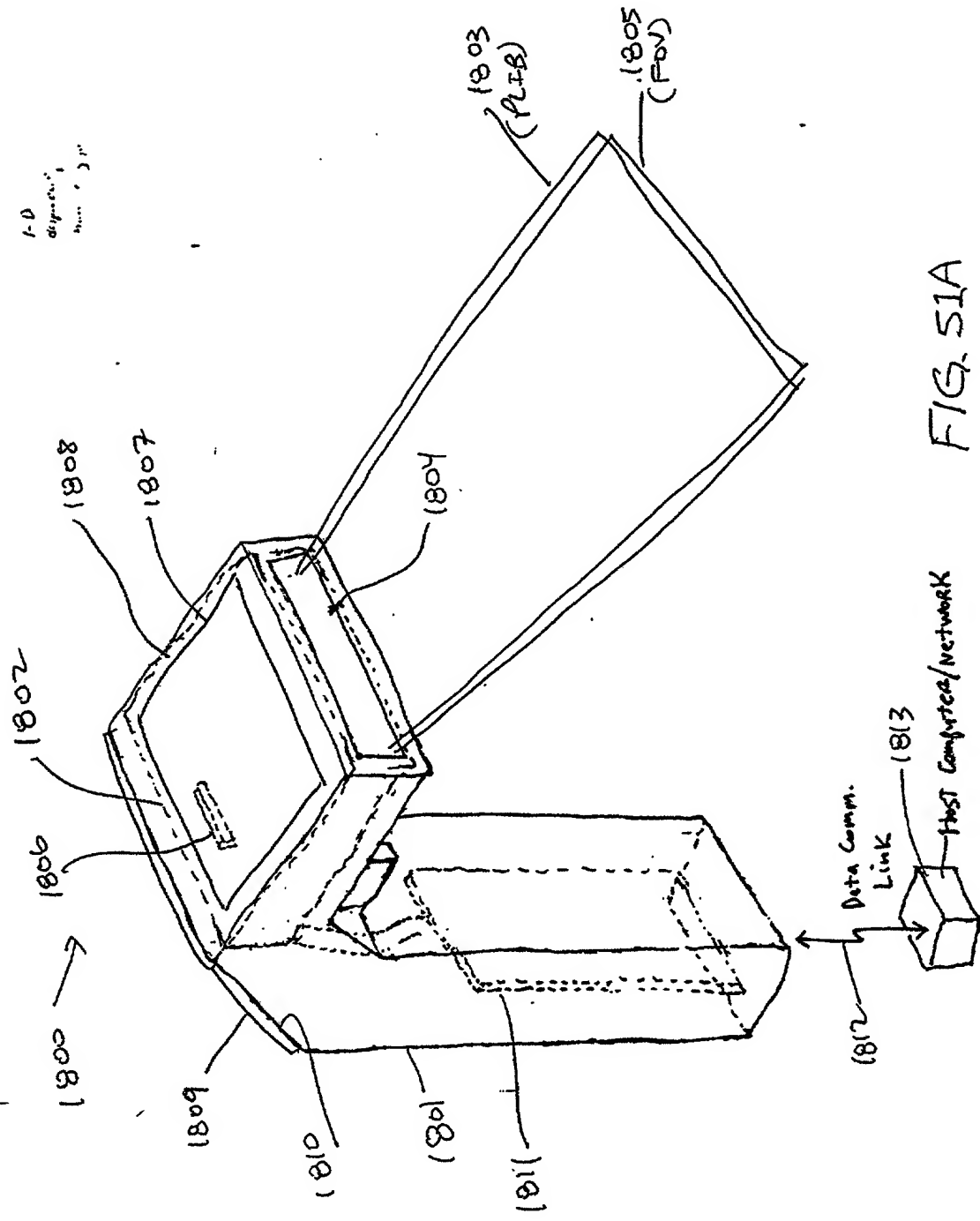


FIG. 51A

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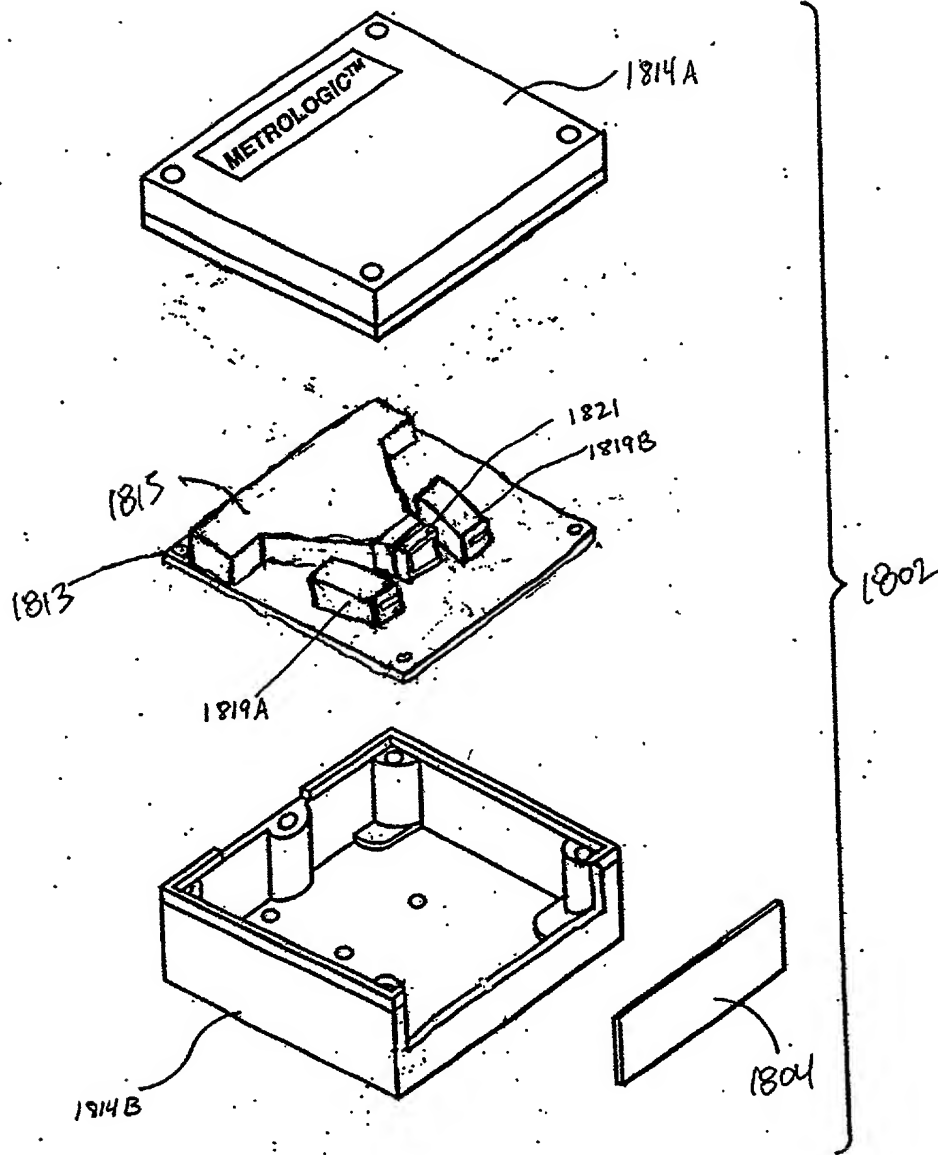


FIG. 51B

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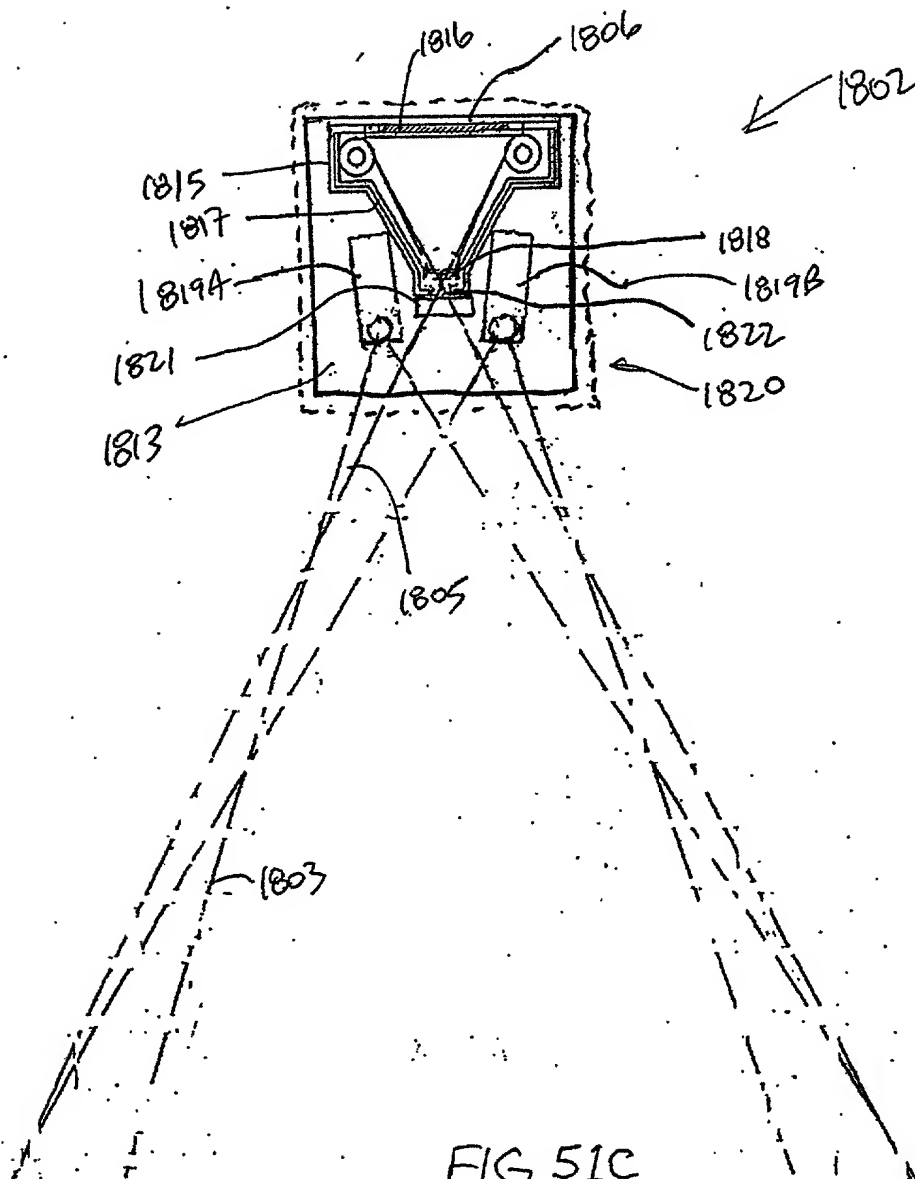


FIG. 51C

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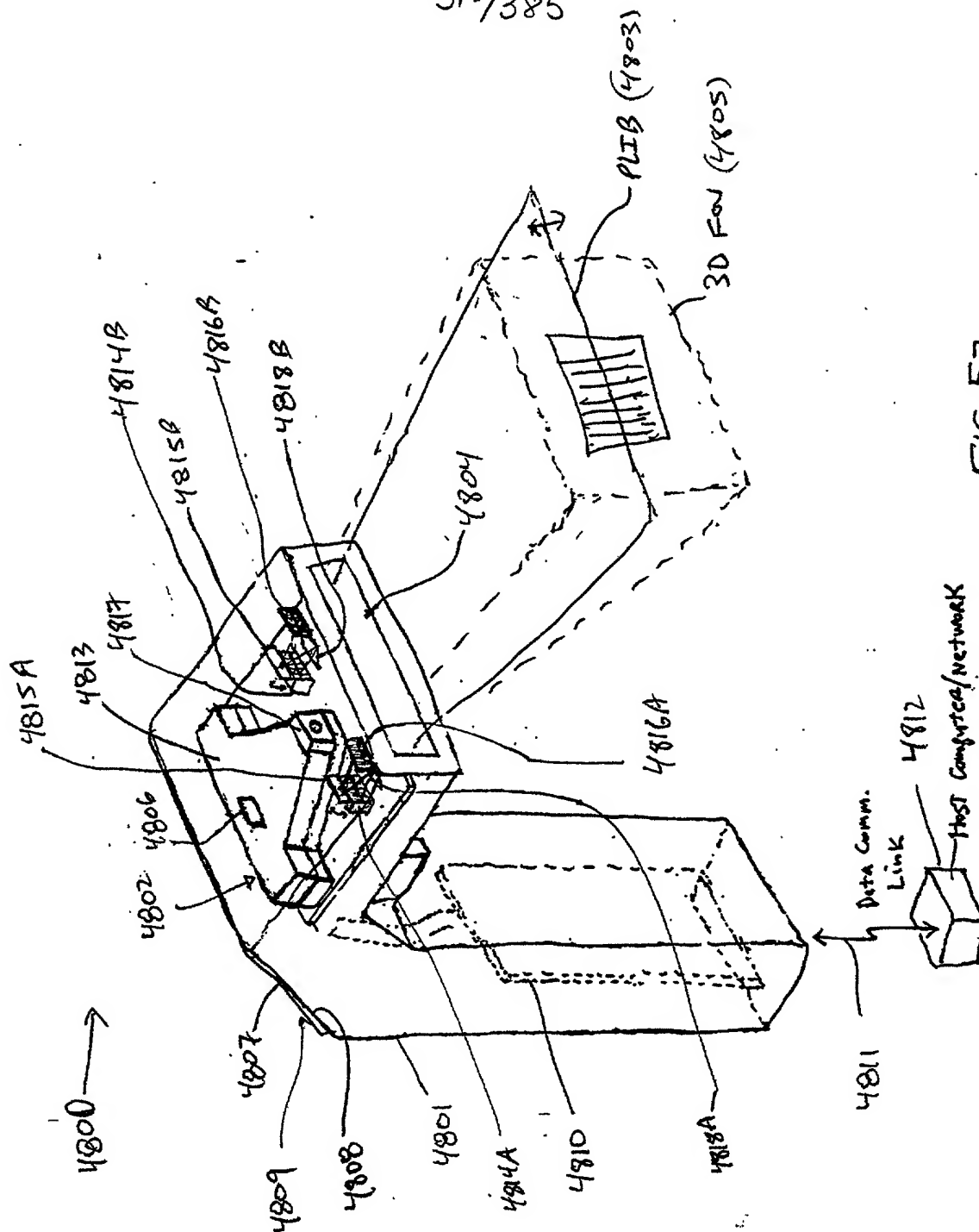
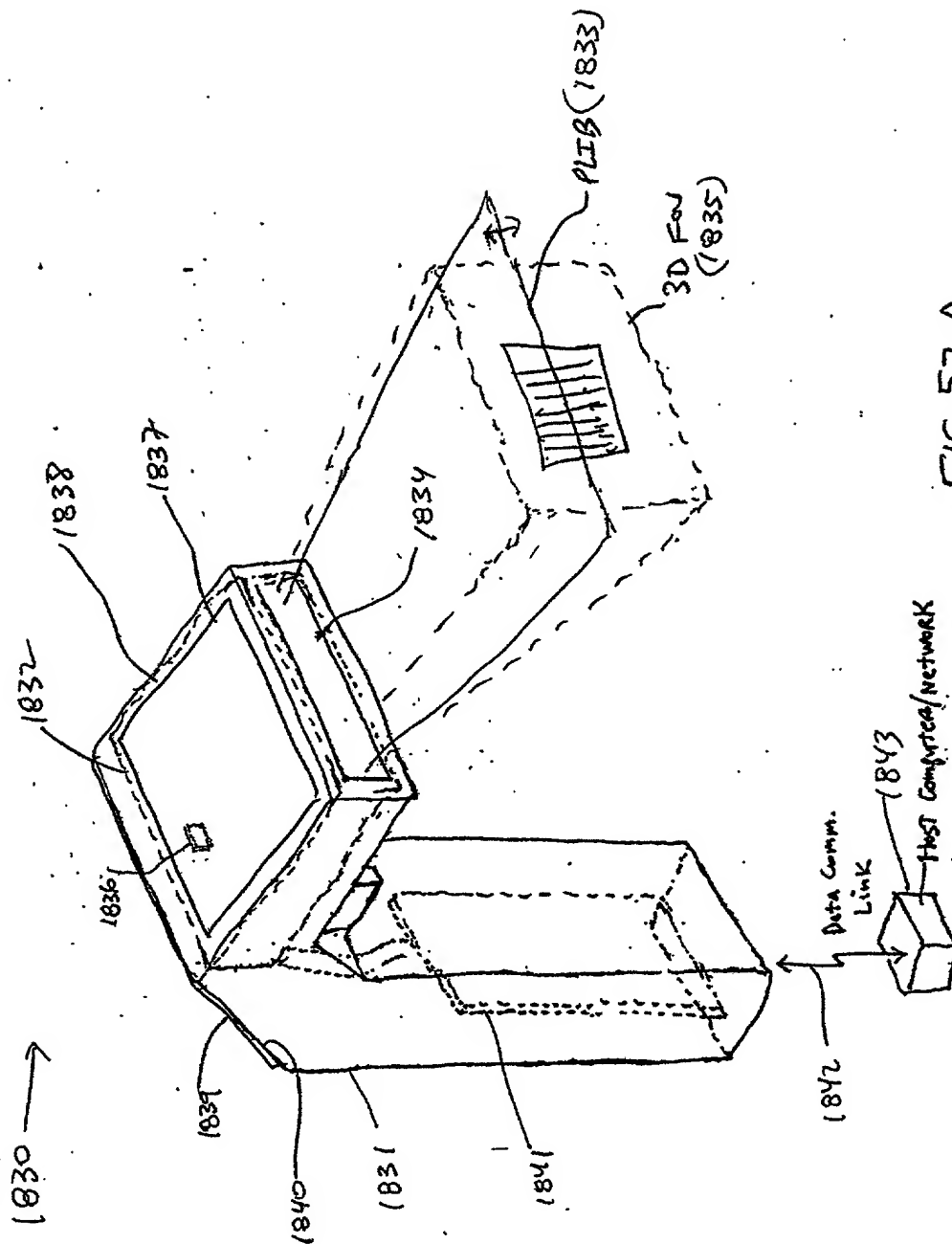


FIG. 52

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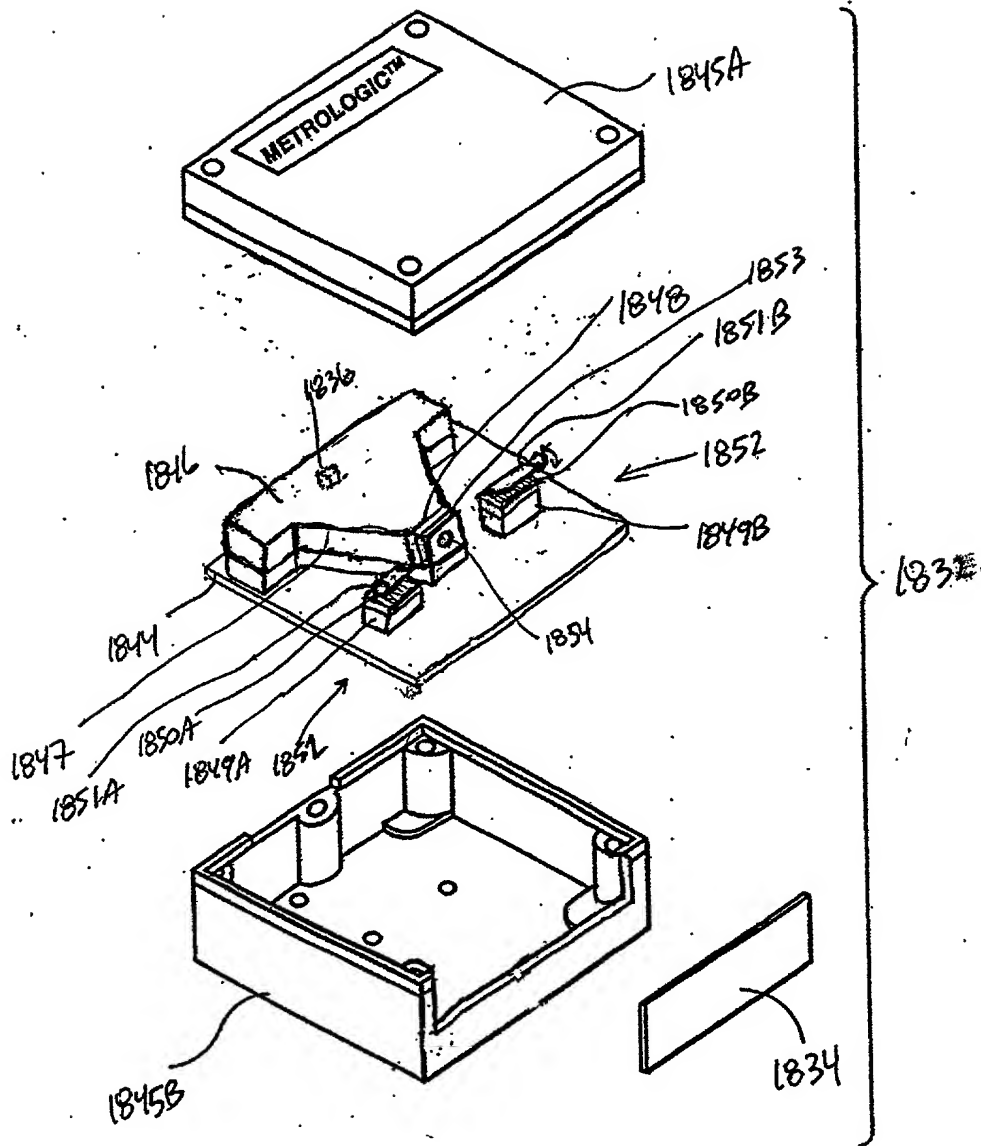


FIG. 52B

Fig. 113A-3B

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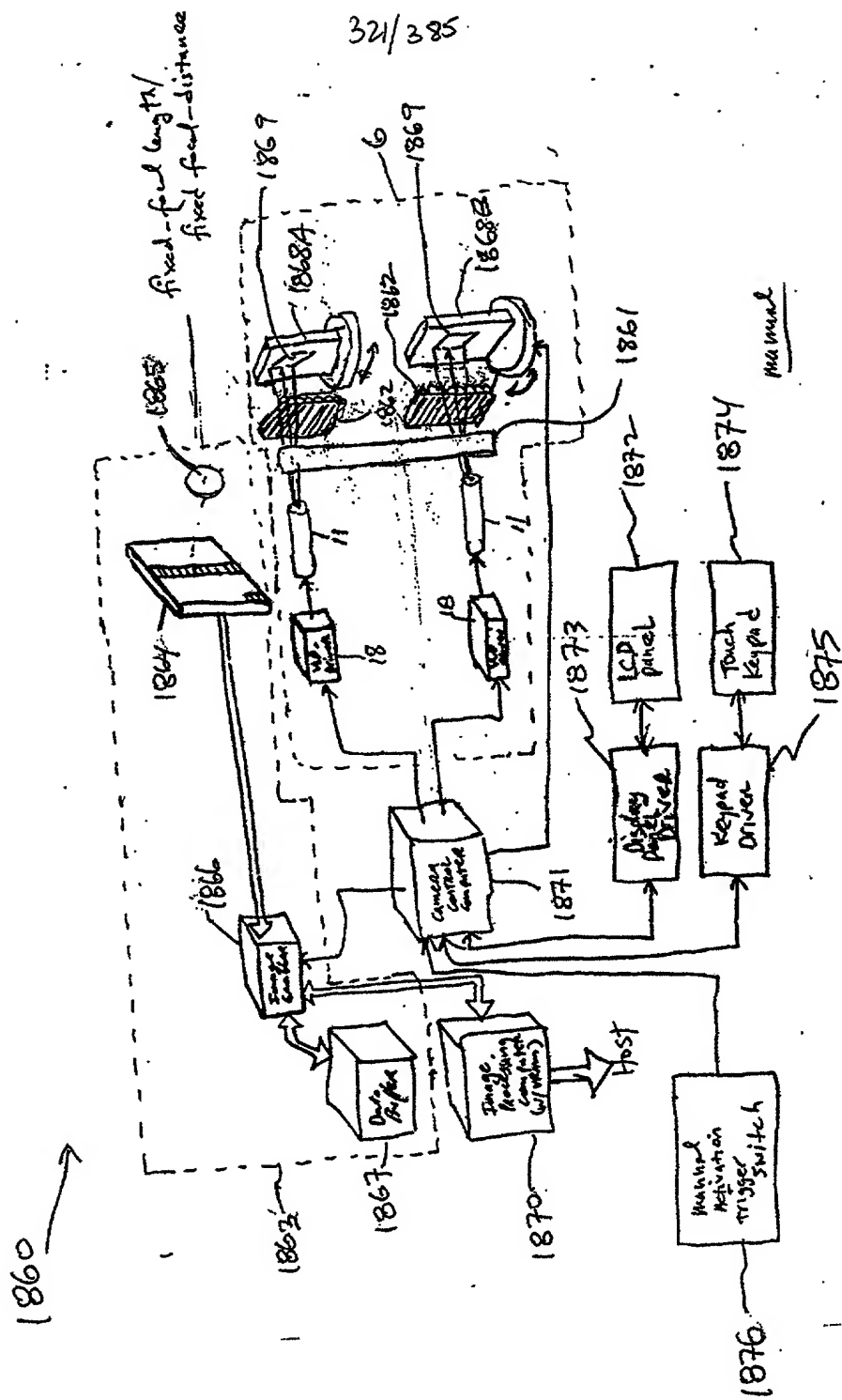
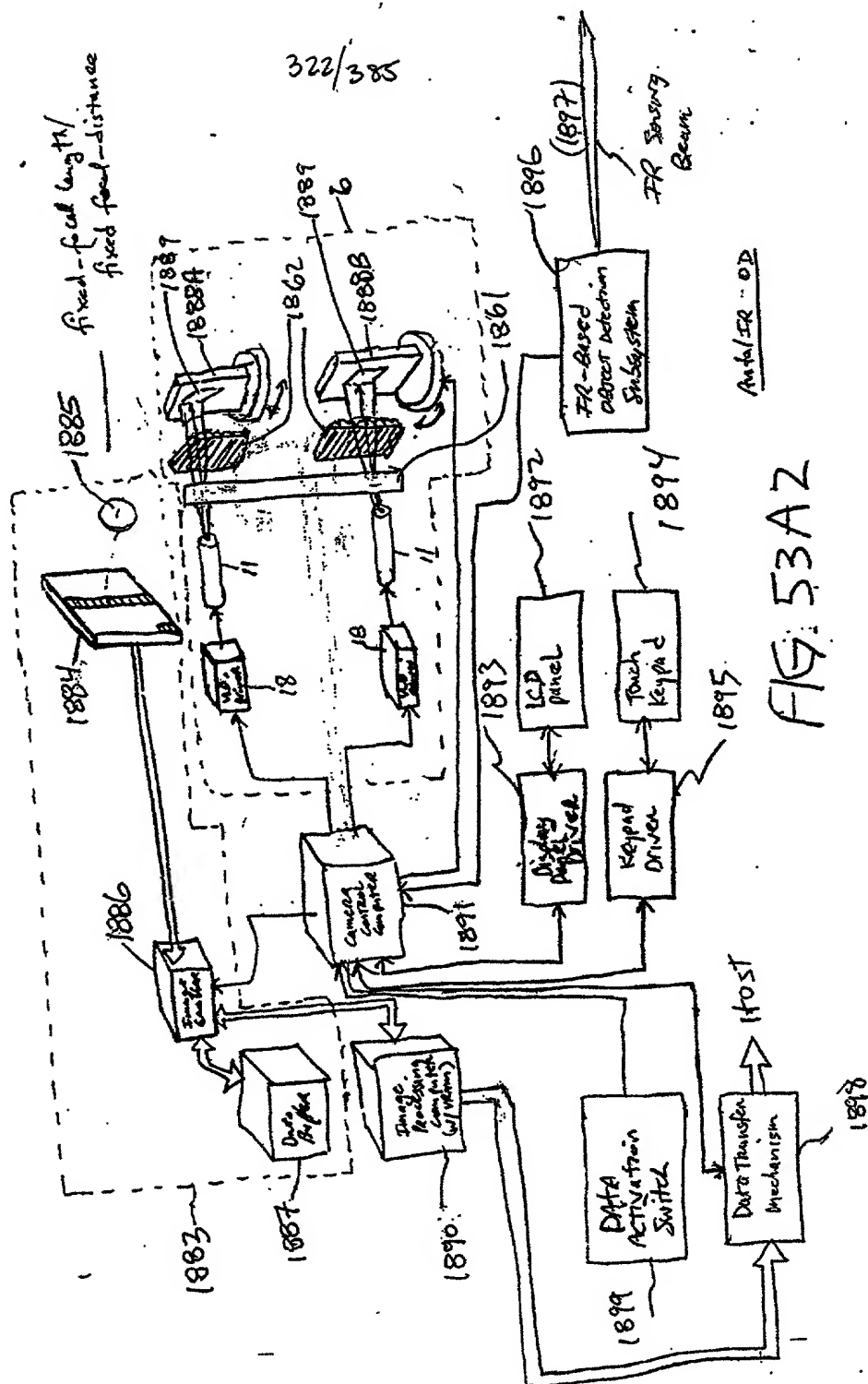
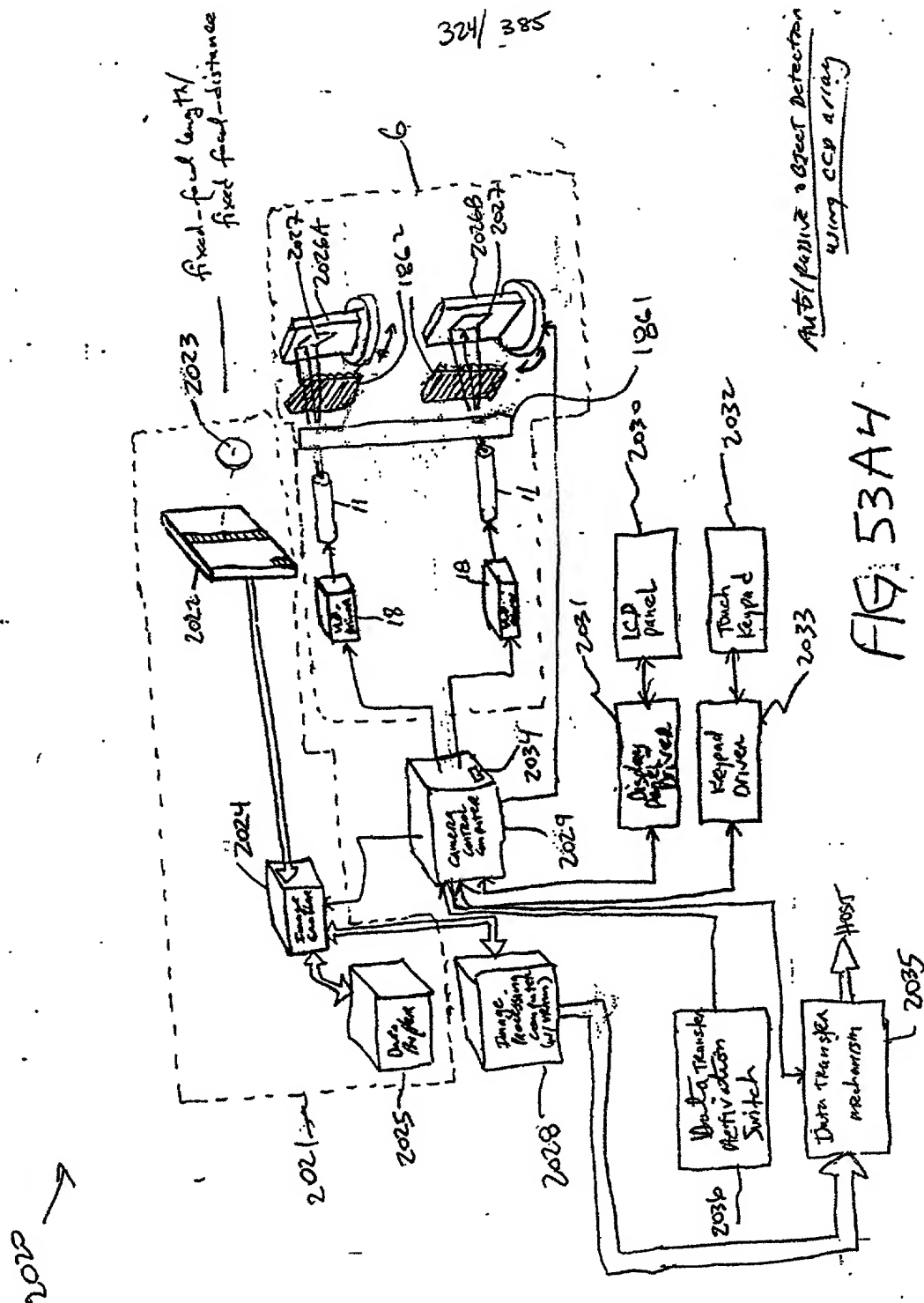


FIG. 53A1

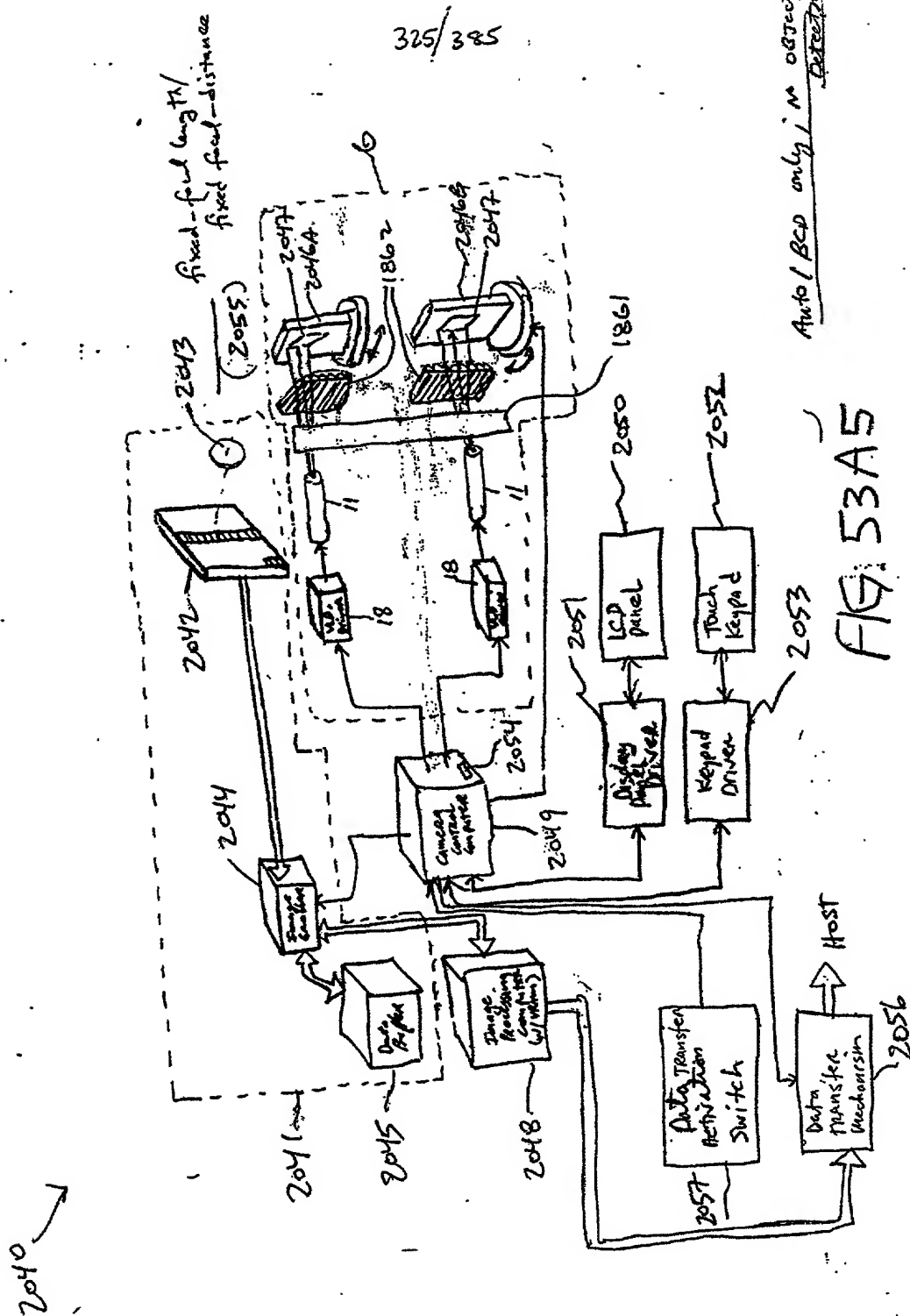
1380





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Auto / BCD only; no object detection



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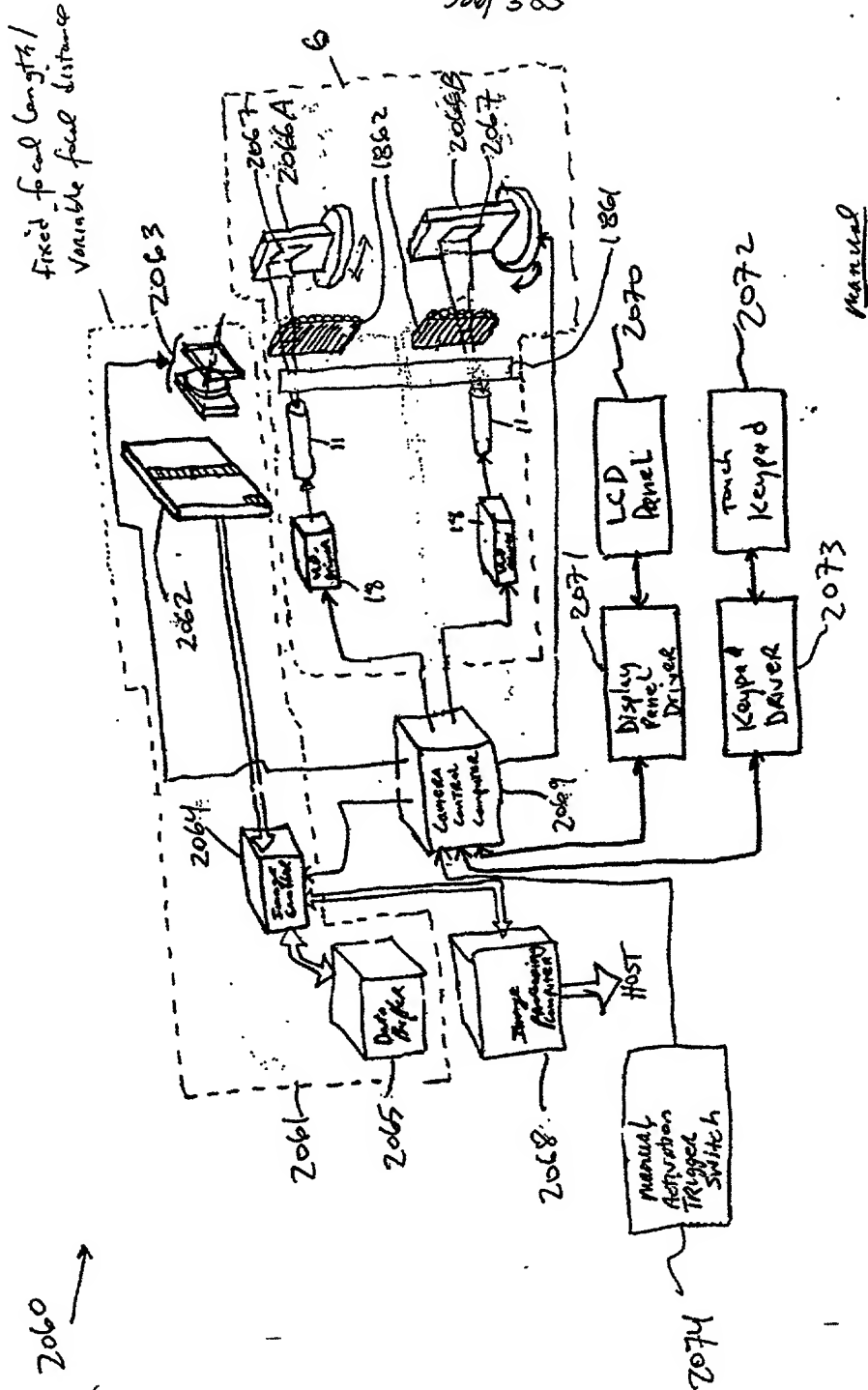
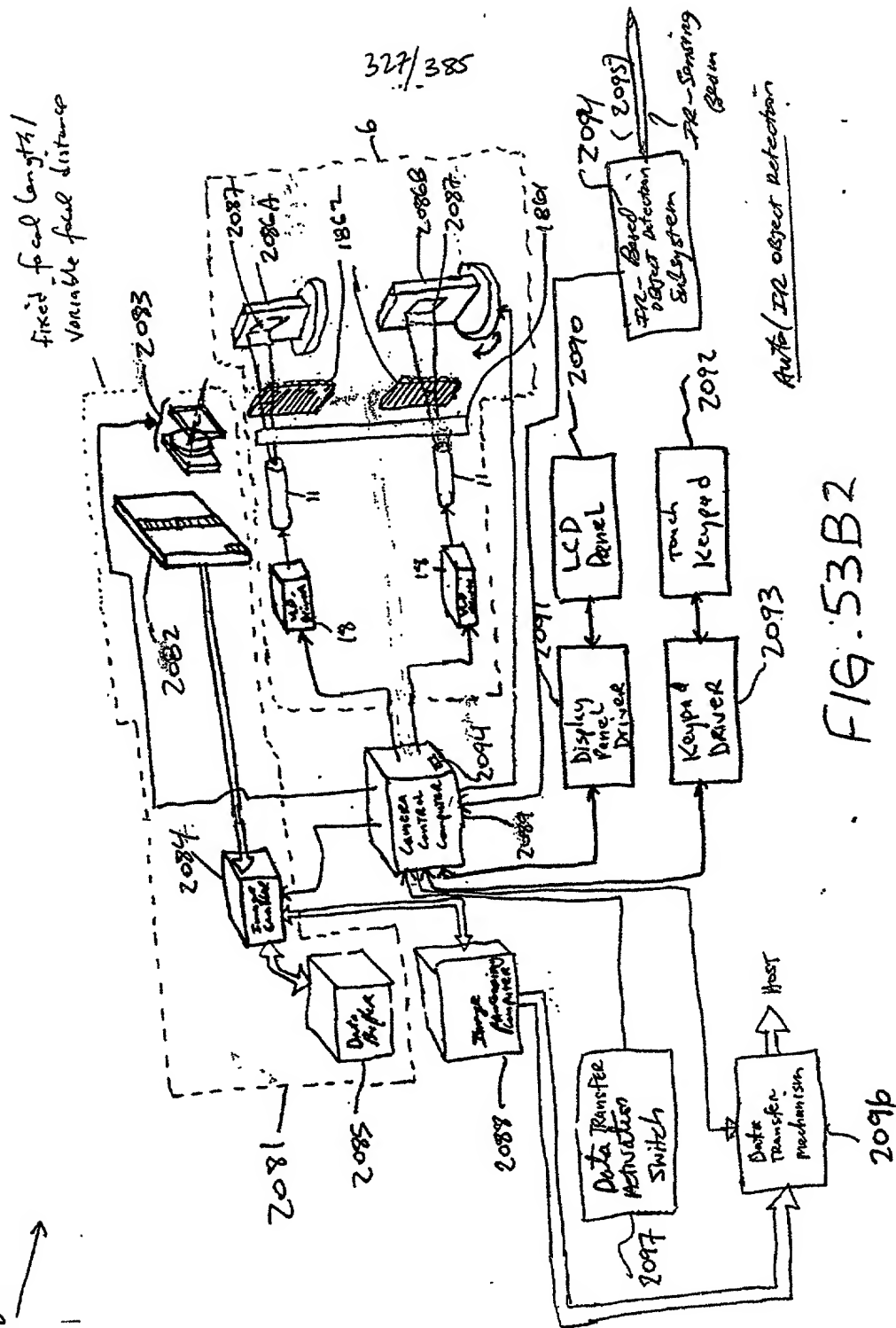
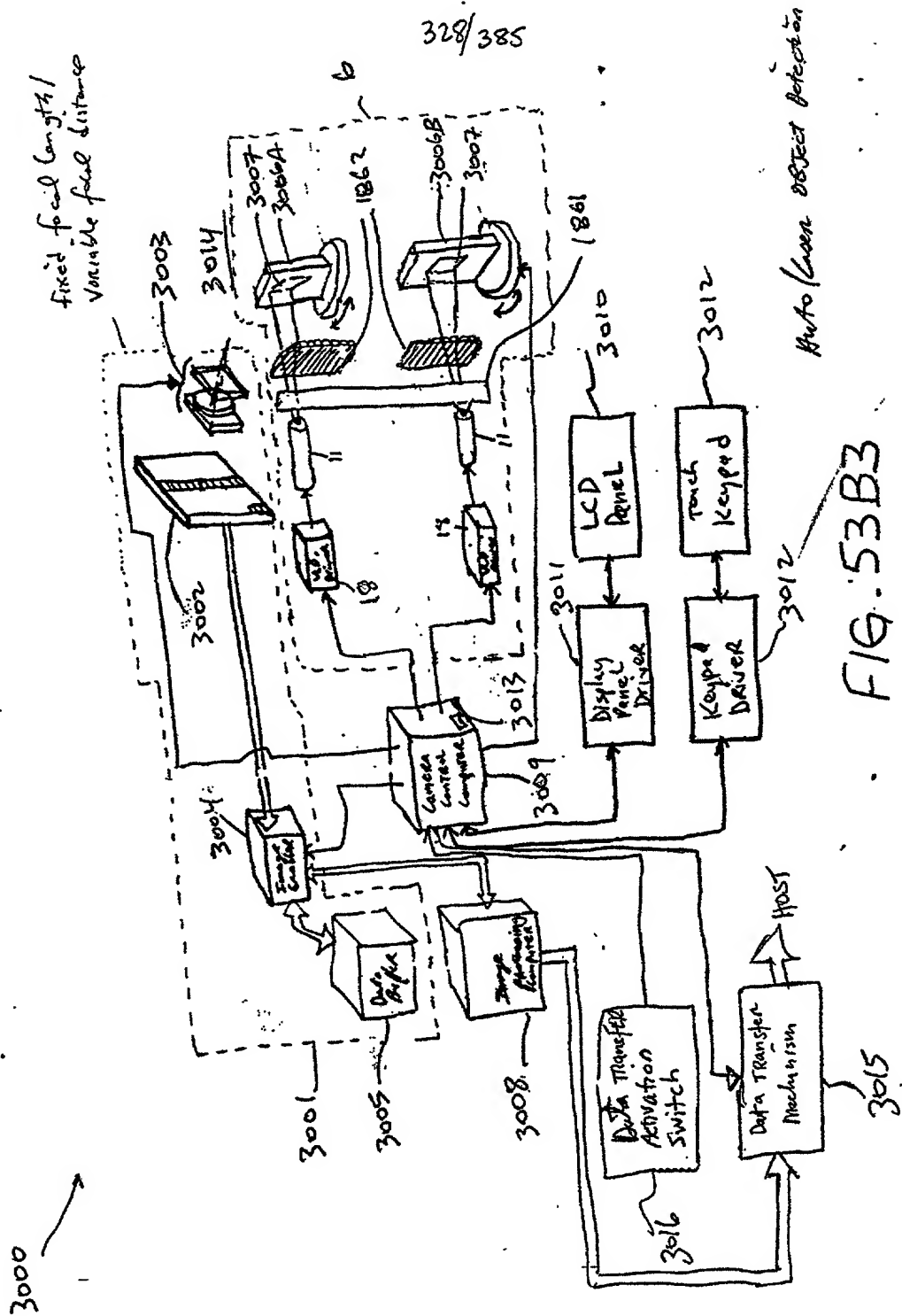


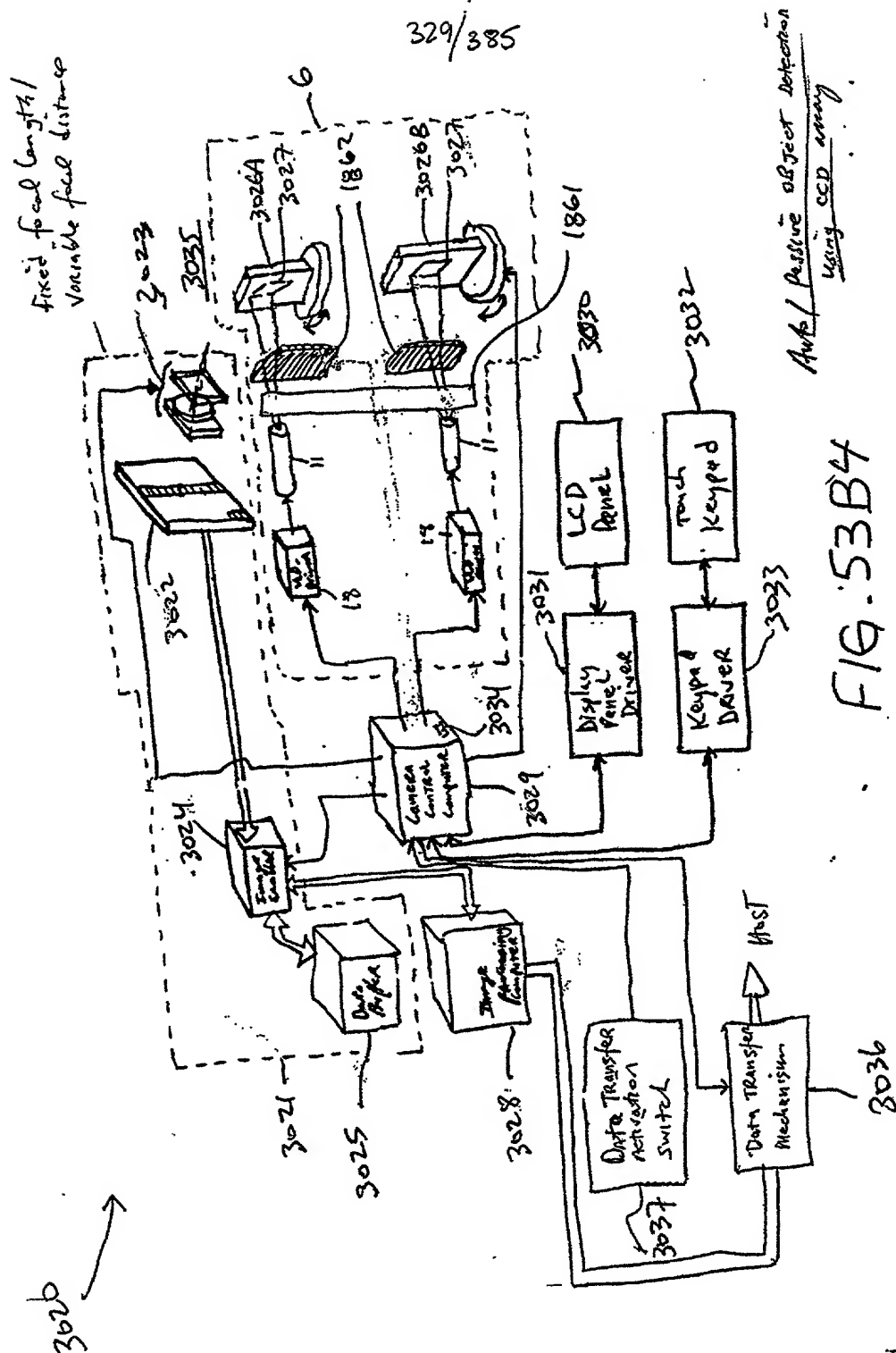
FIG. 53B1

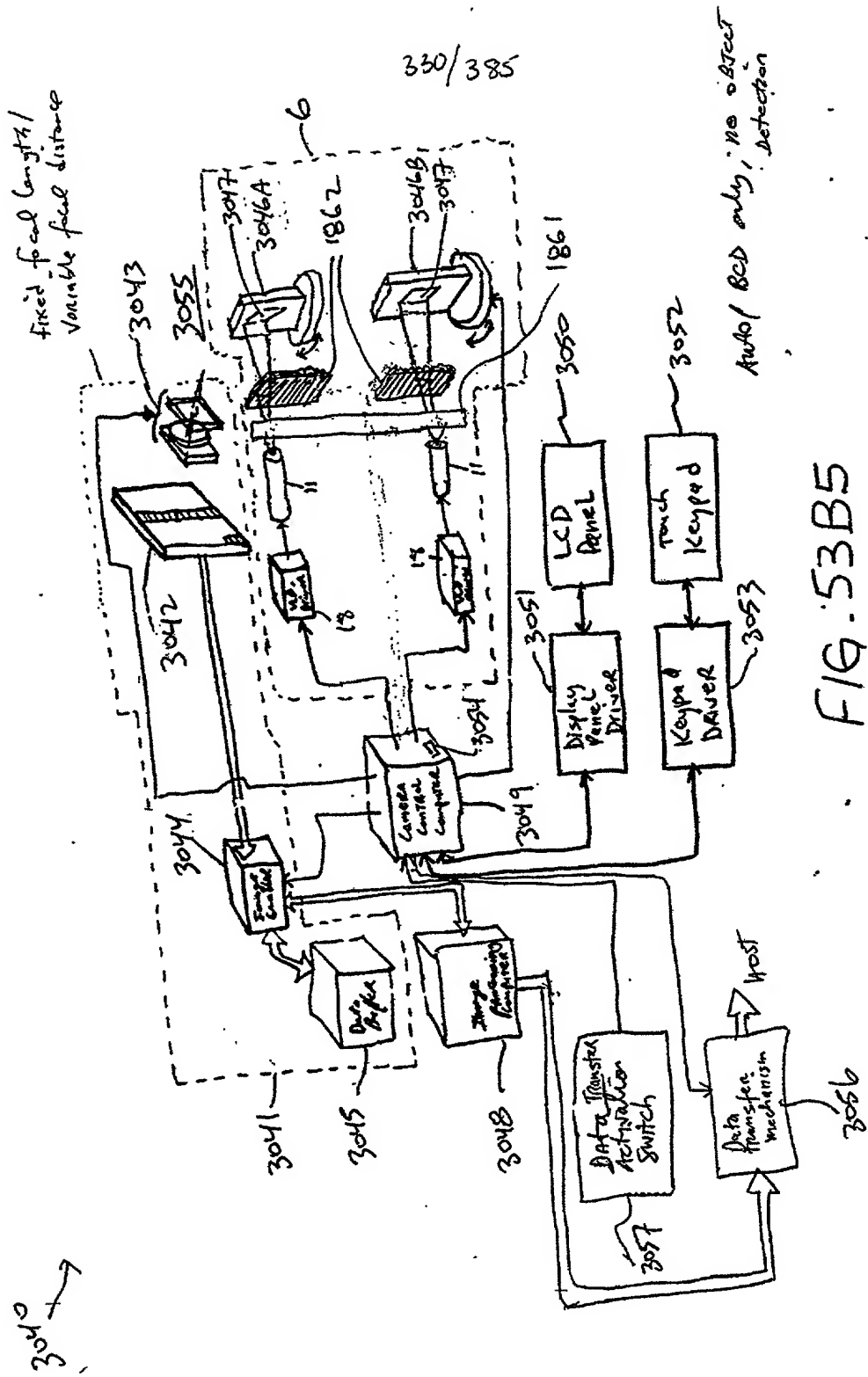
2080 

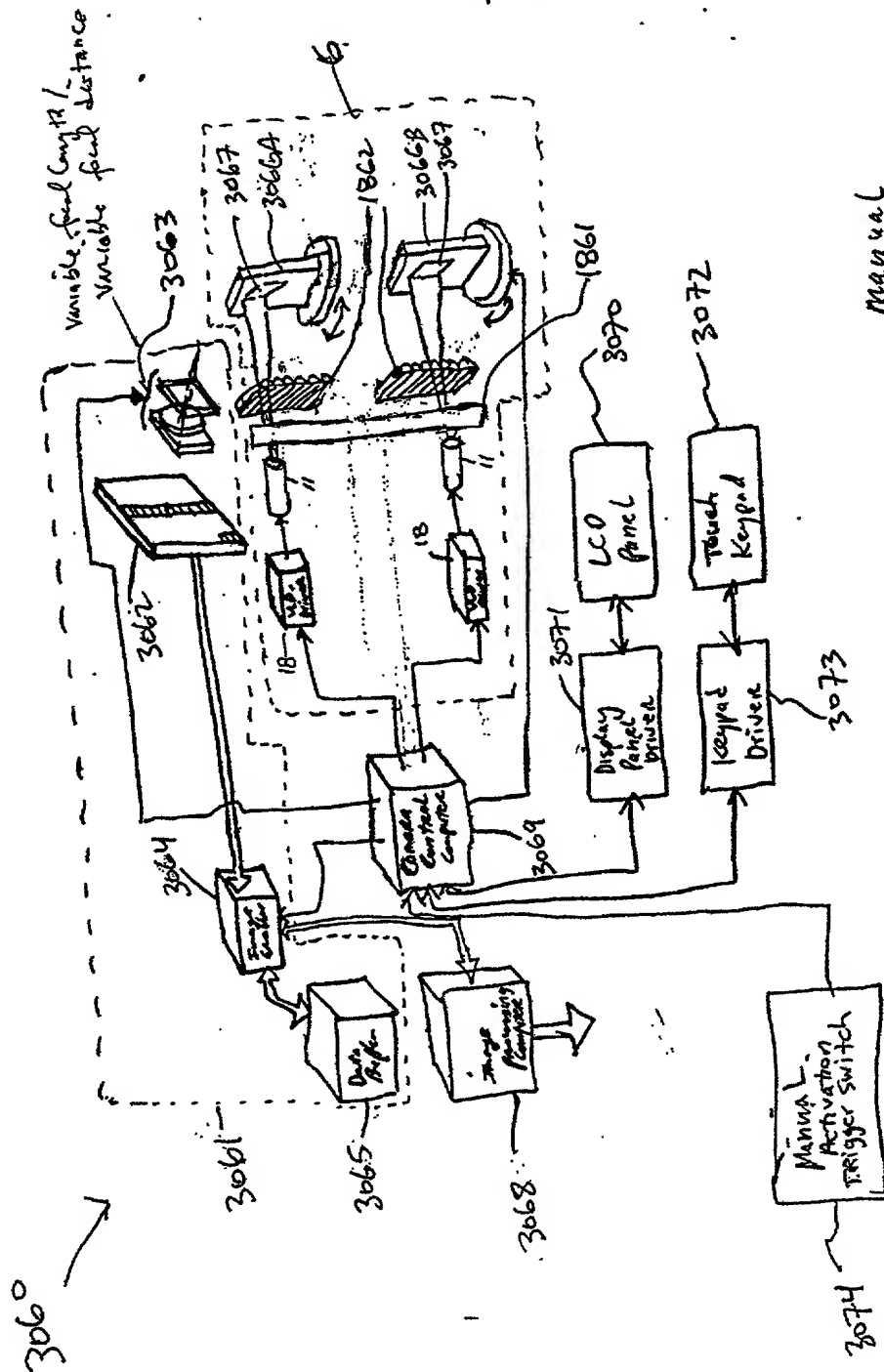




1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278</
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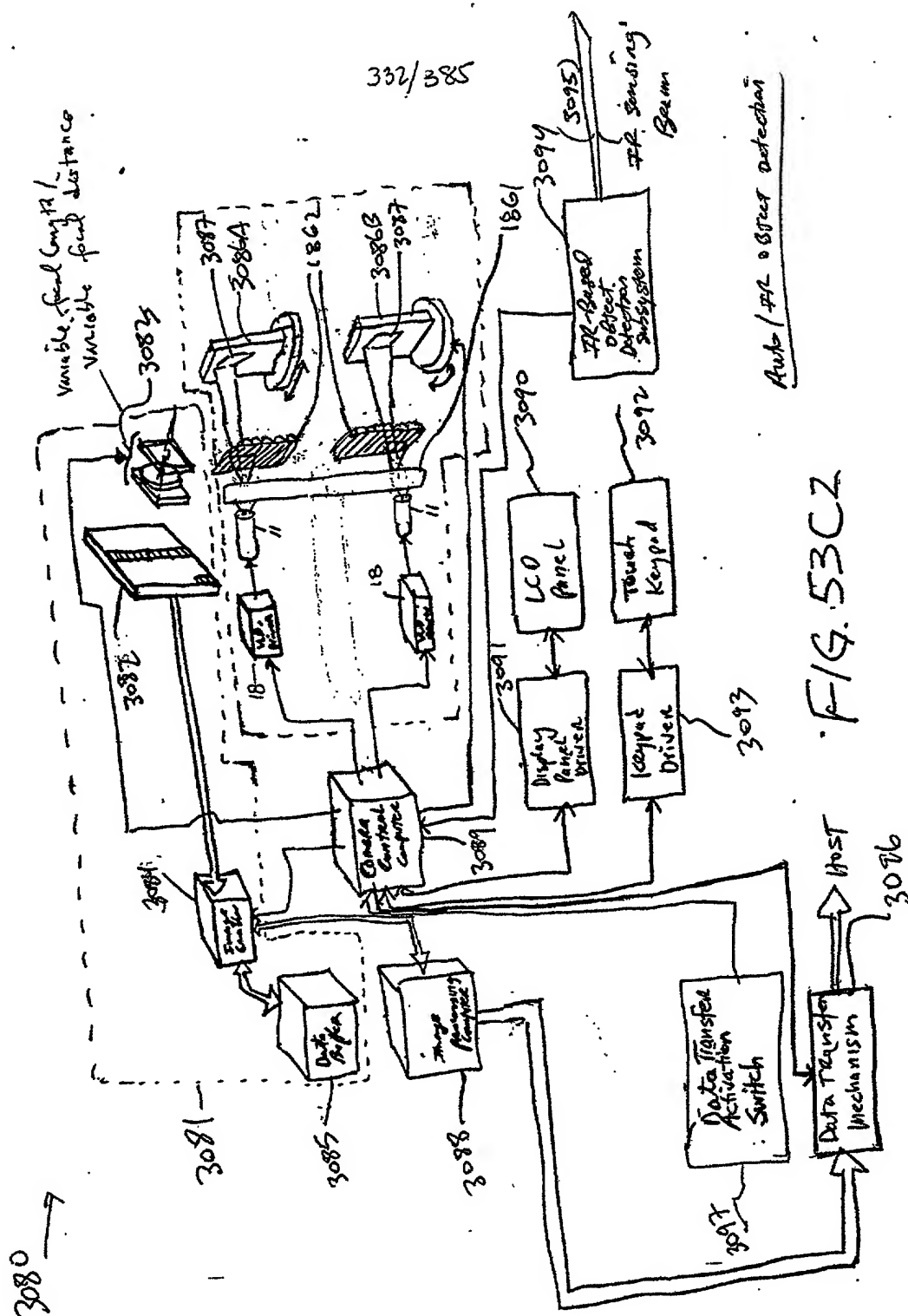




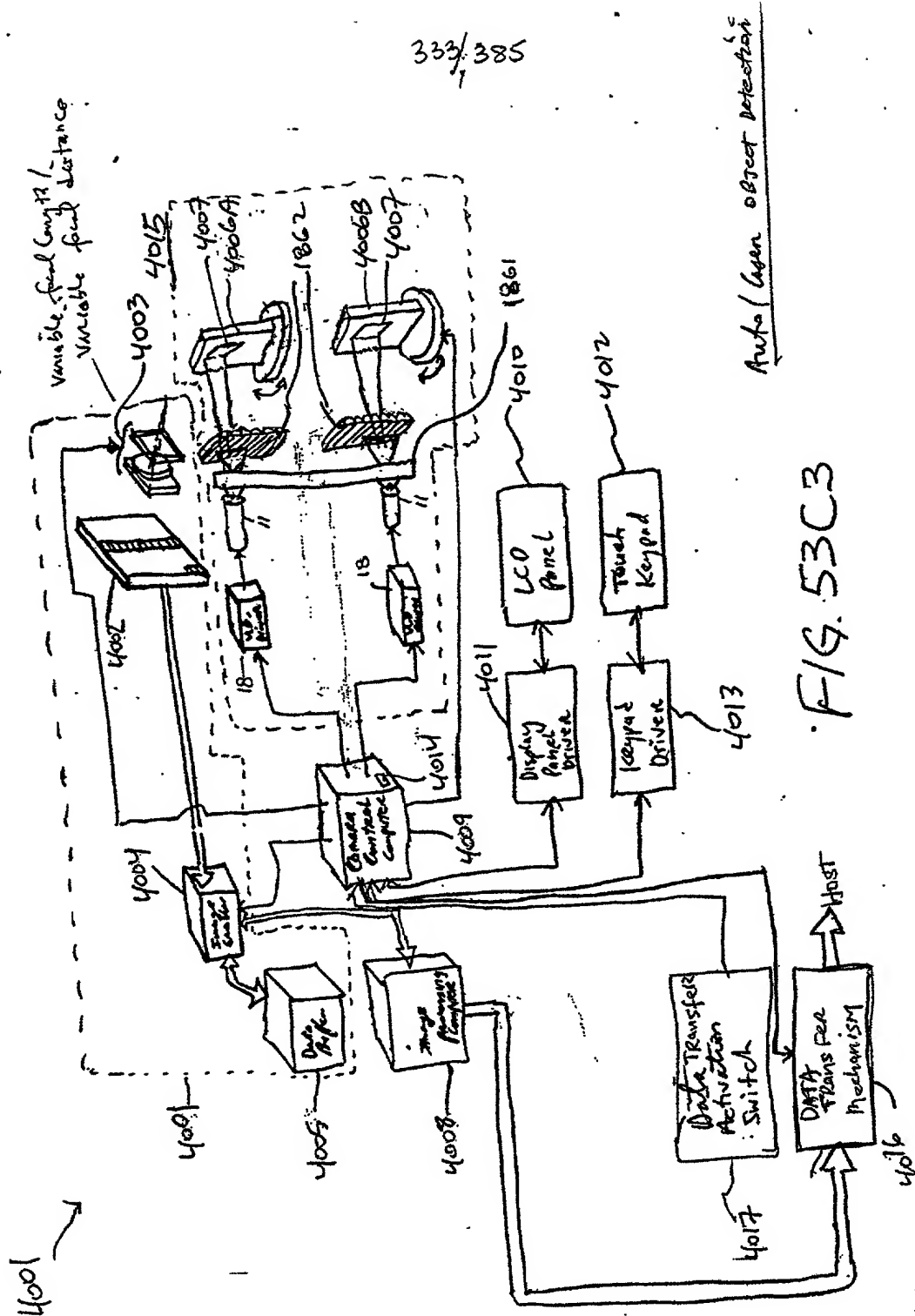
Manual

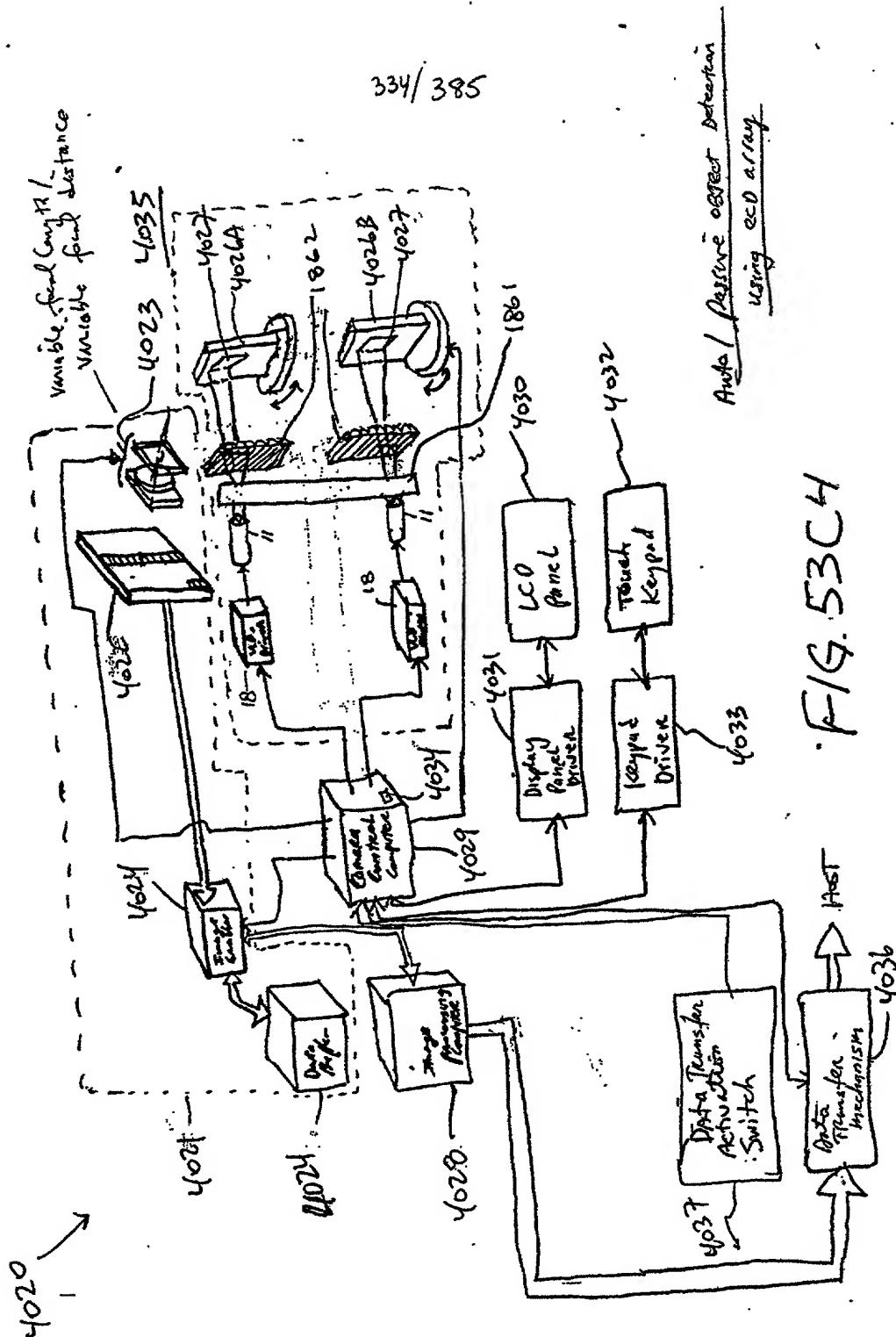
FIG. 53C1

NAME	AGE	RELATION	DATE	PLACE	REMARKS
JOHN J. JONES	25	SON	1880	NEW YORK	W. J.
MARY J. JONES	22	DAUGHTER	1880	NEW YORK	W. J.
JOHN J. JONES	20	SON	1880	NEW YORK	W. J.
MARY J. JONES	18	DAUGHTER	1880	NEW YORK	W. J.
JOHN J. JONES	15	SON	1880	NEW YORK	W. J.
MARY J. JONES	12	DAUGHTER	1880	NEW YORK	W. J.
JOHN J. JONES	10	SON	1880	NEW YORK	W. J.
MARY J. JONES	8	DAUGHTER	1880	NEW YORK	W. J.
JOHN J. JONES	6	SON	1880	NEW YORK	W. J.
MARY J. JONES	4	DAUGHTER	1880	NEW YORK	W. J.
JOHN J. JONES	2	SON	1880	NEW YORK	W. J.
MARY J. JONES	1	DAUGHTER	1880	NEW YORK	W. J.

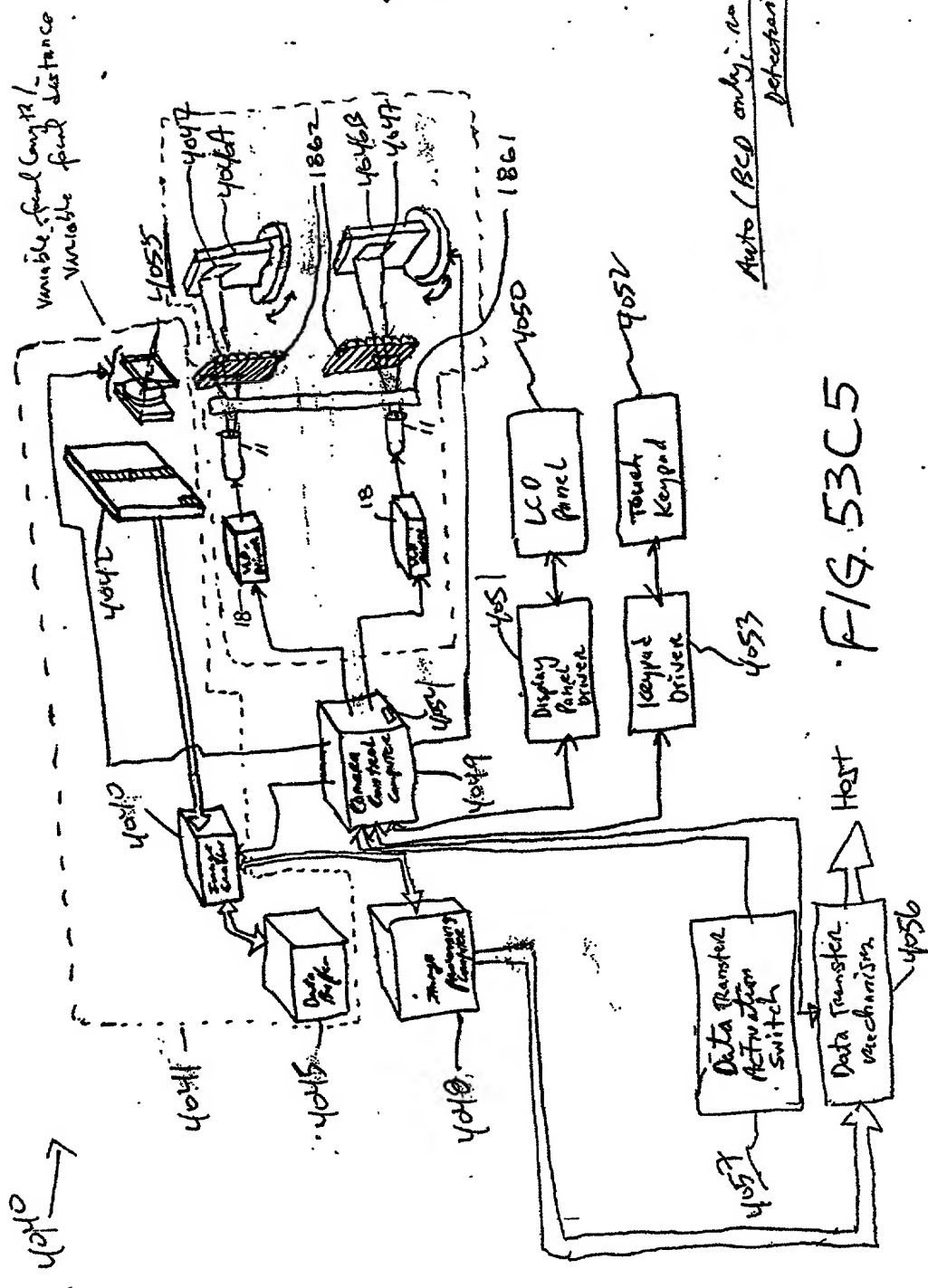


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Auto (BCD only) no object detection

FIG. 53C5

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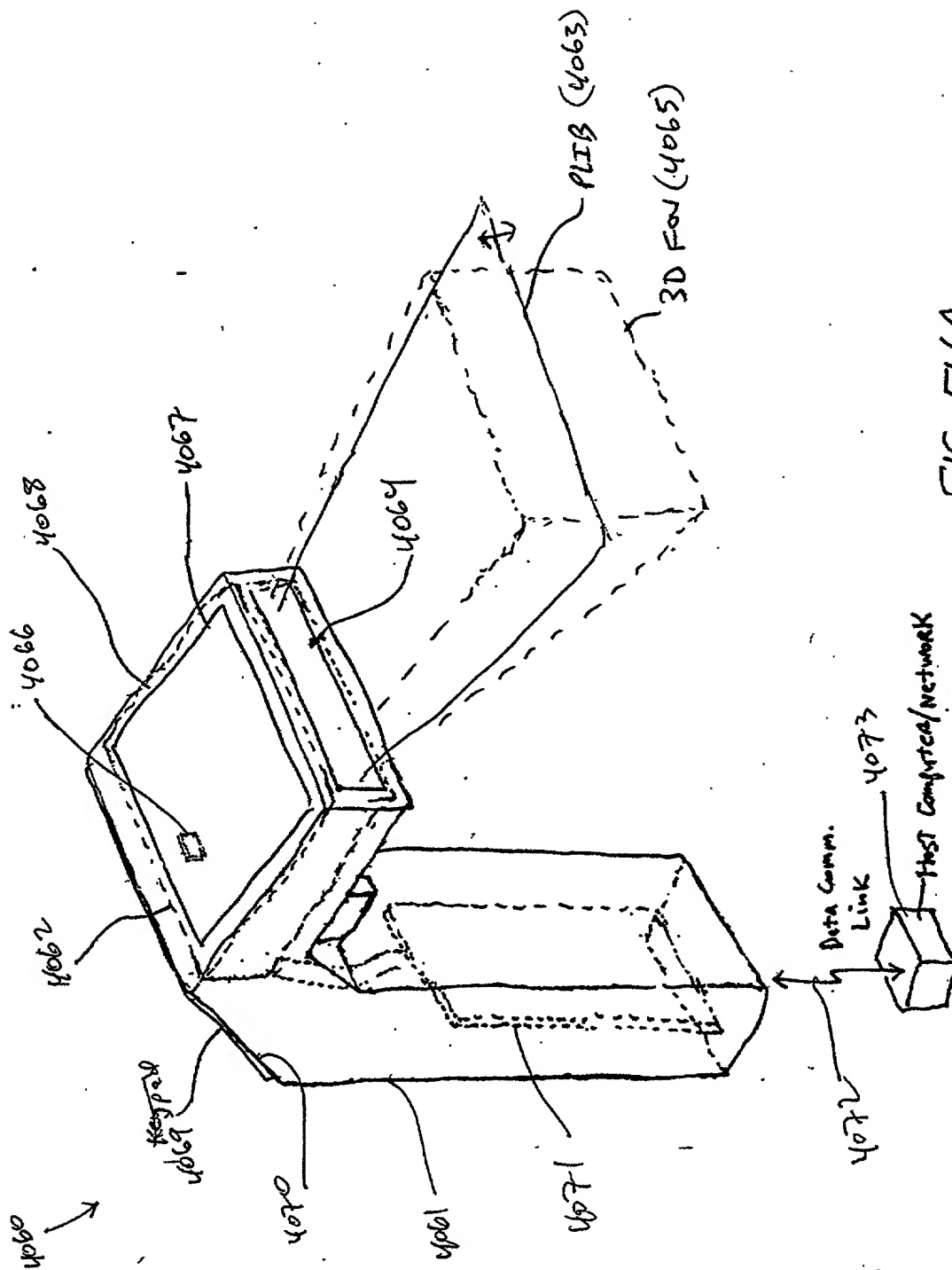


FIG. 54A

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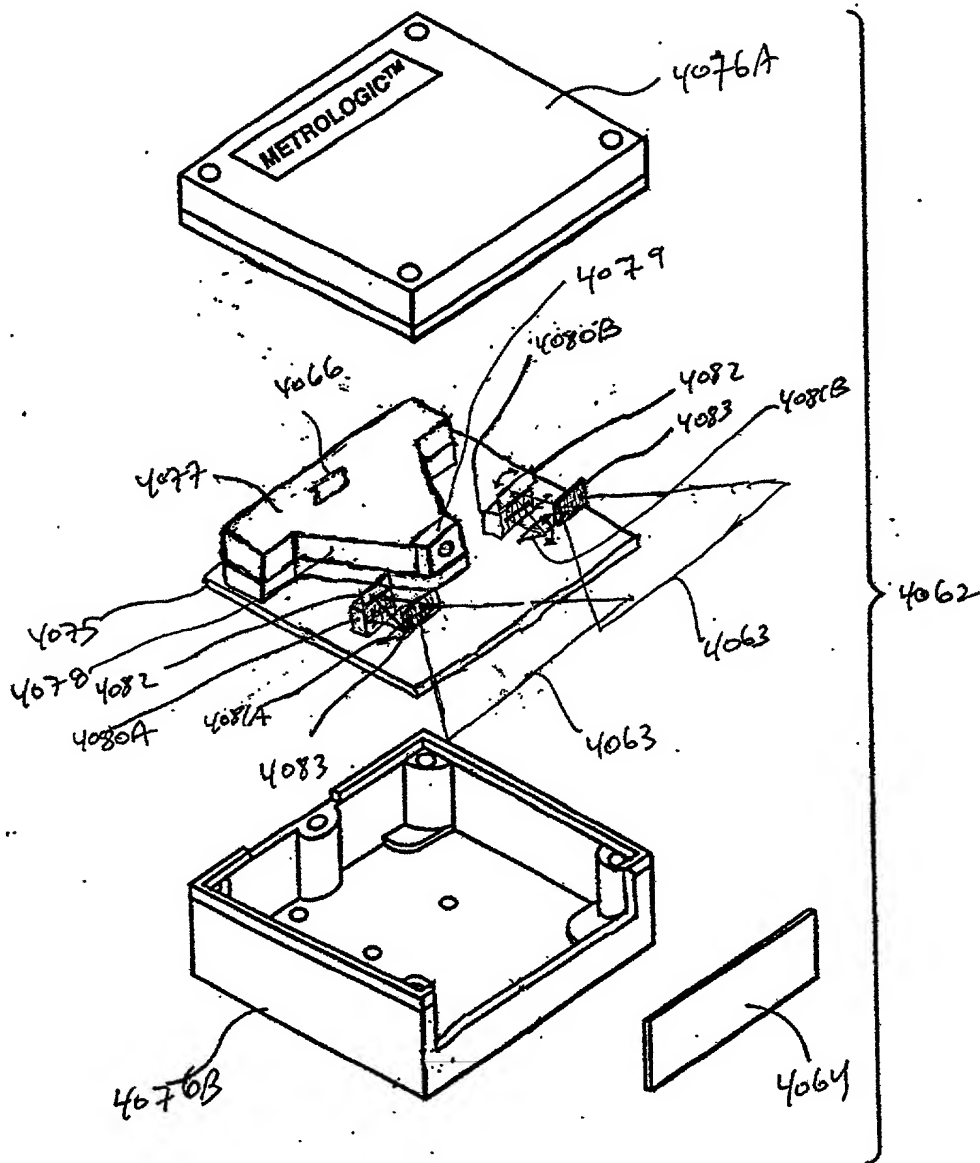
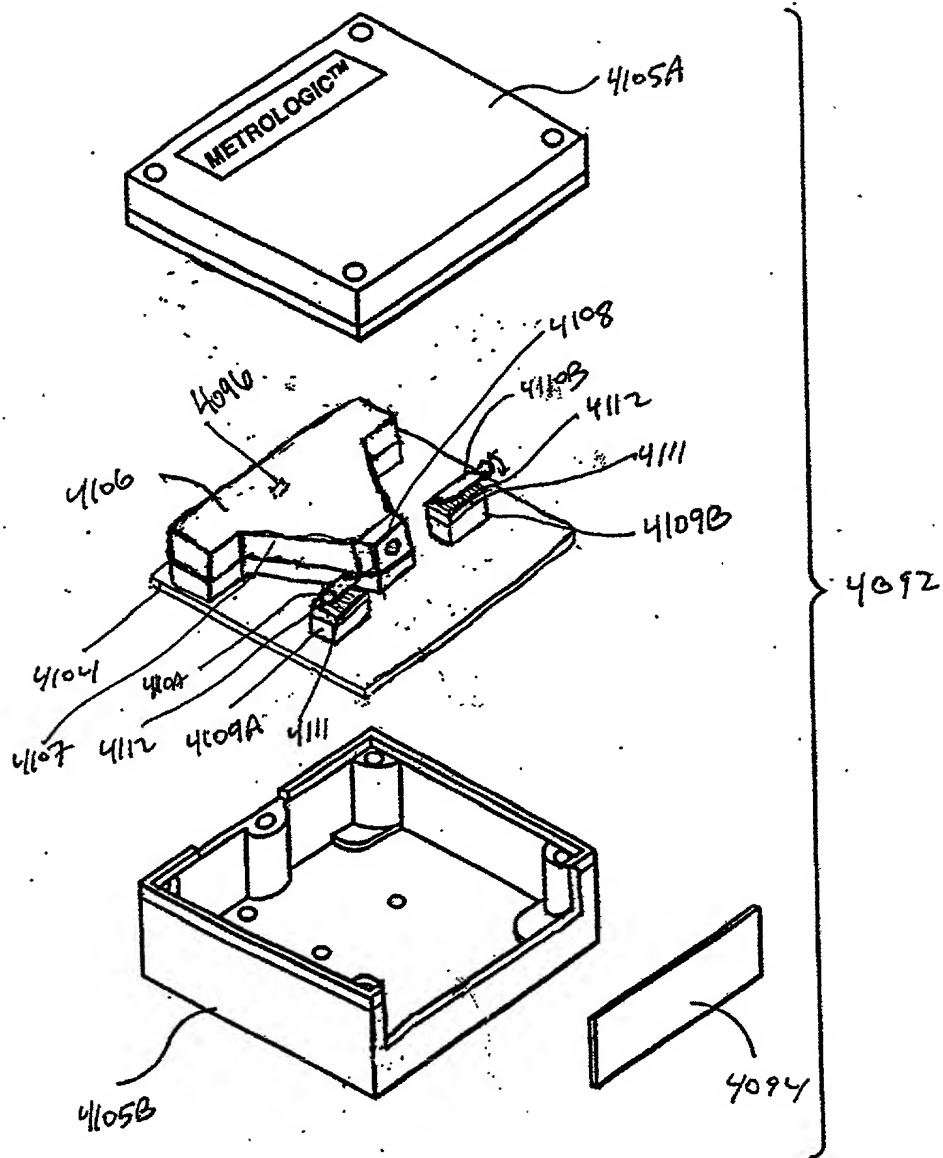


FIG. 54B

(dual mirrors)
Fig. 175A-SP1

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- FIG. 55B

Brooks cell -
Fig. 136A-6B

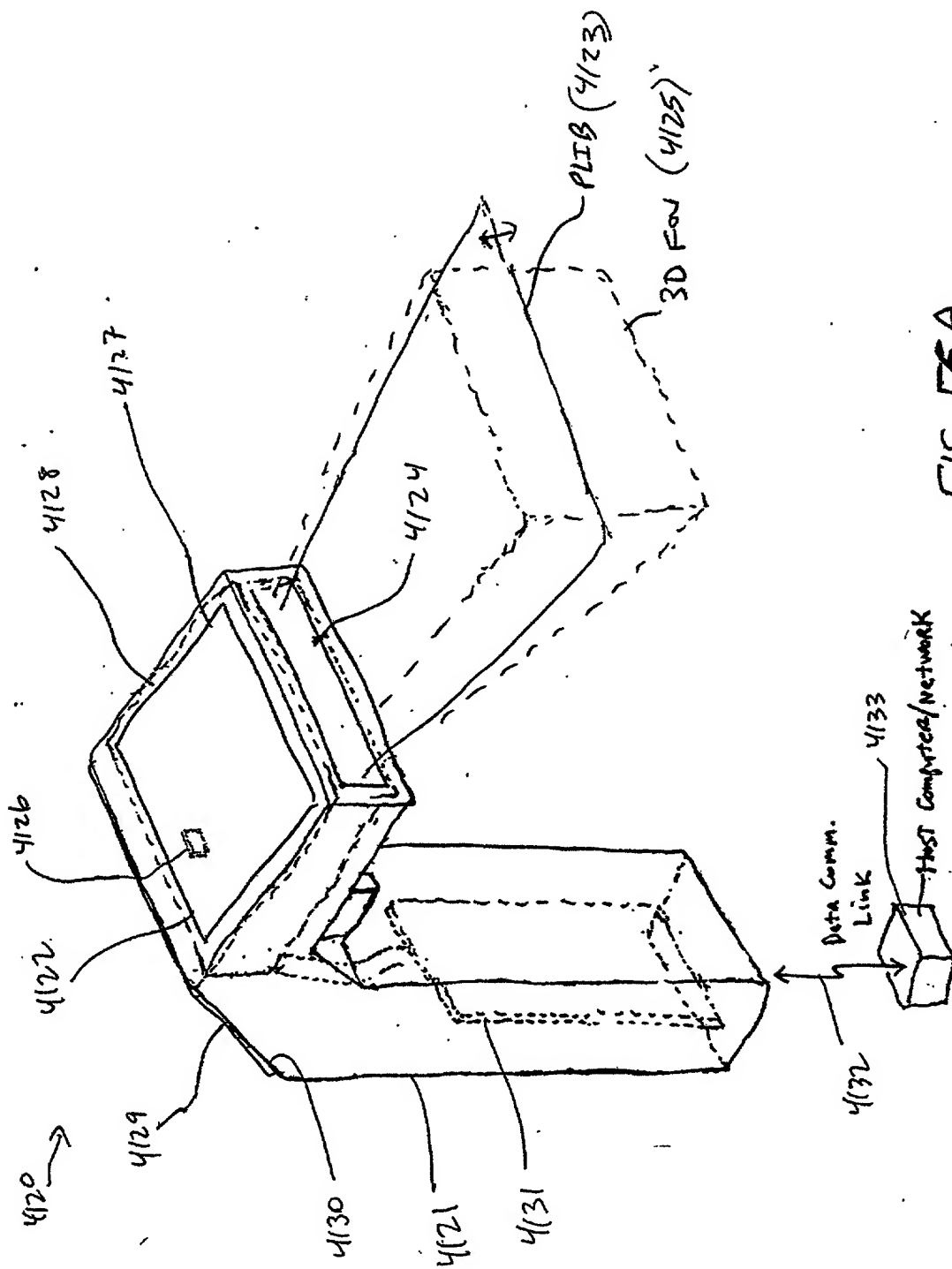


FIG. 56A

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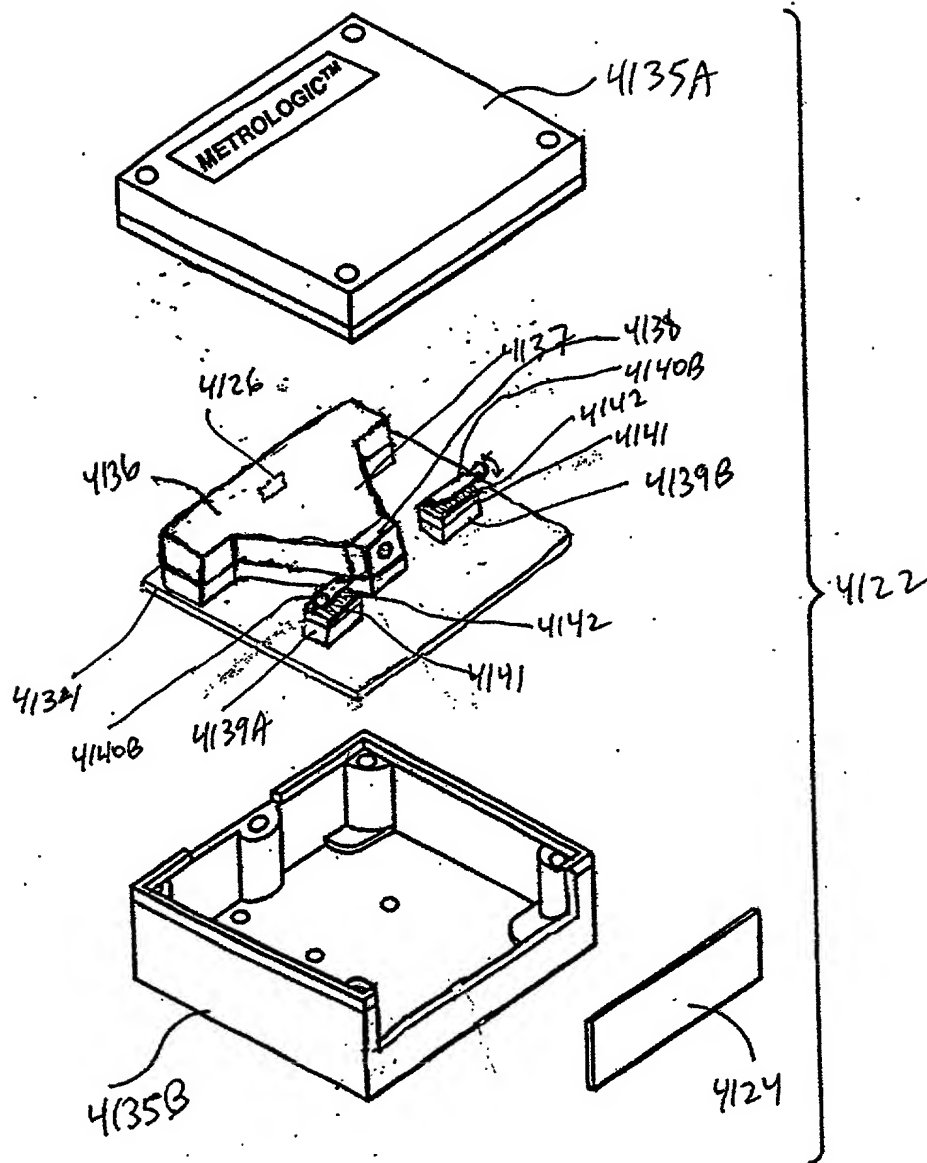


FIG. 56B

DM
Fig. 1I 7A-7C

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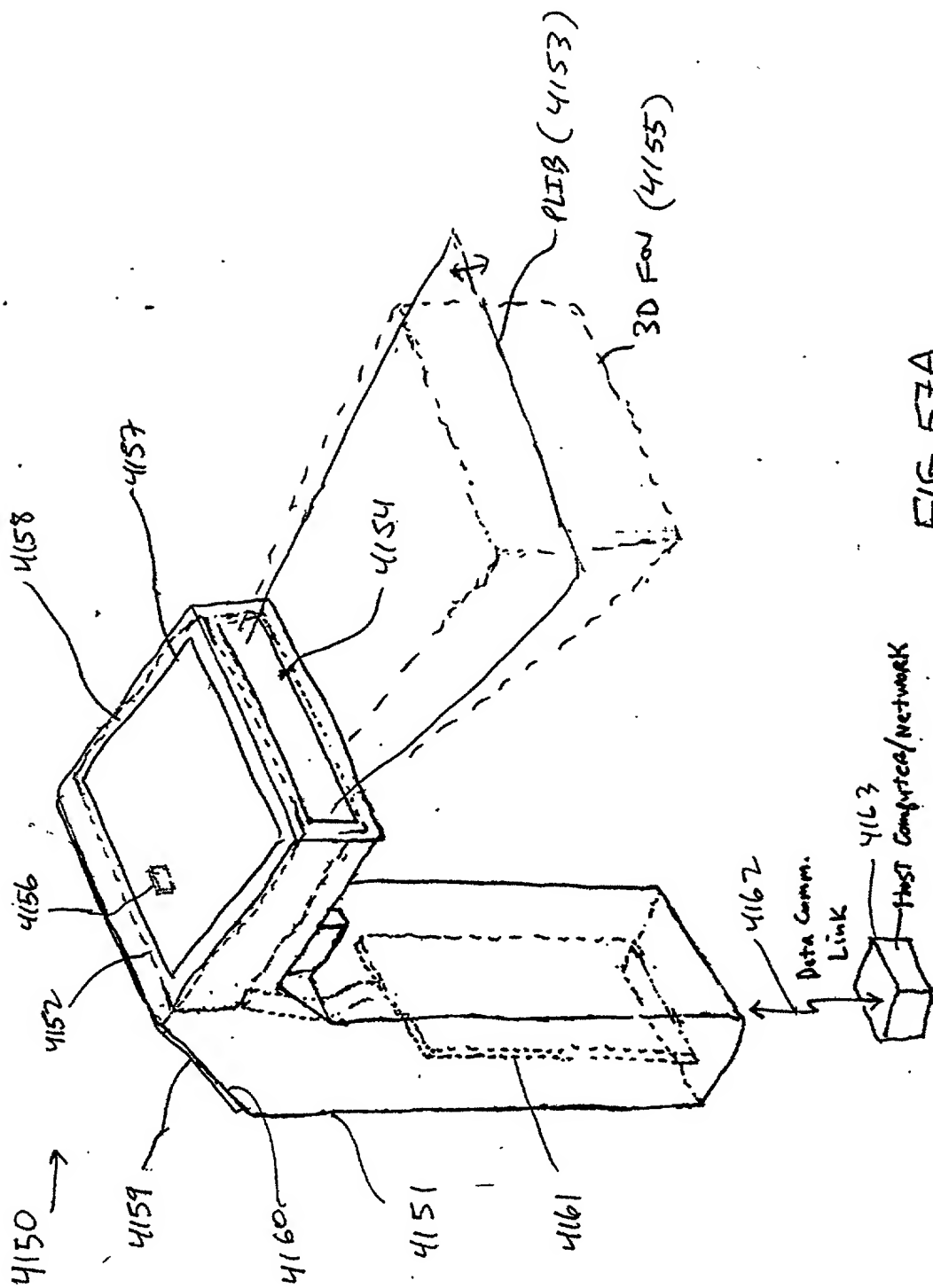


FIG. 57A

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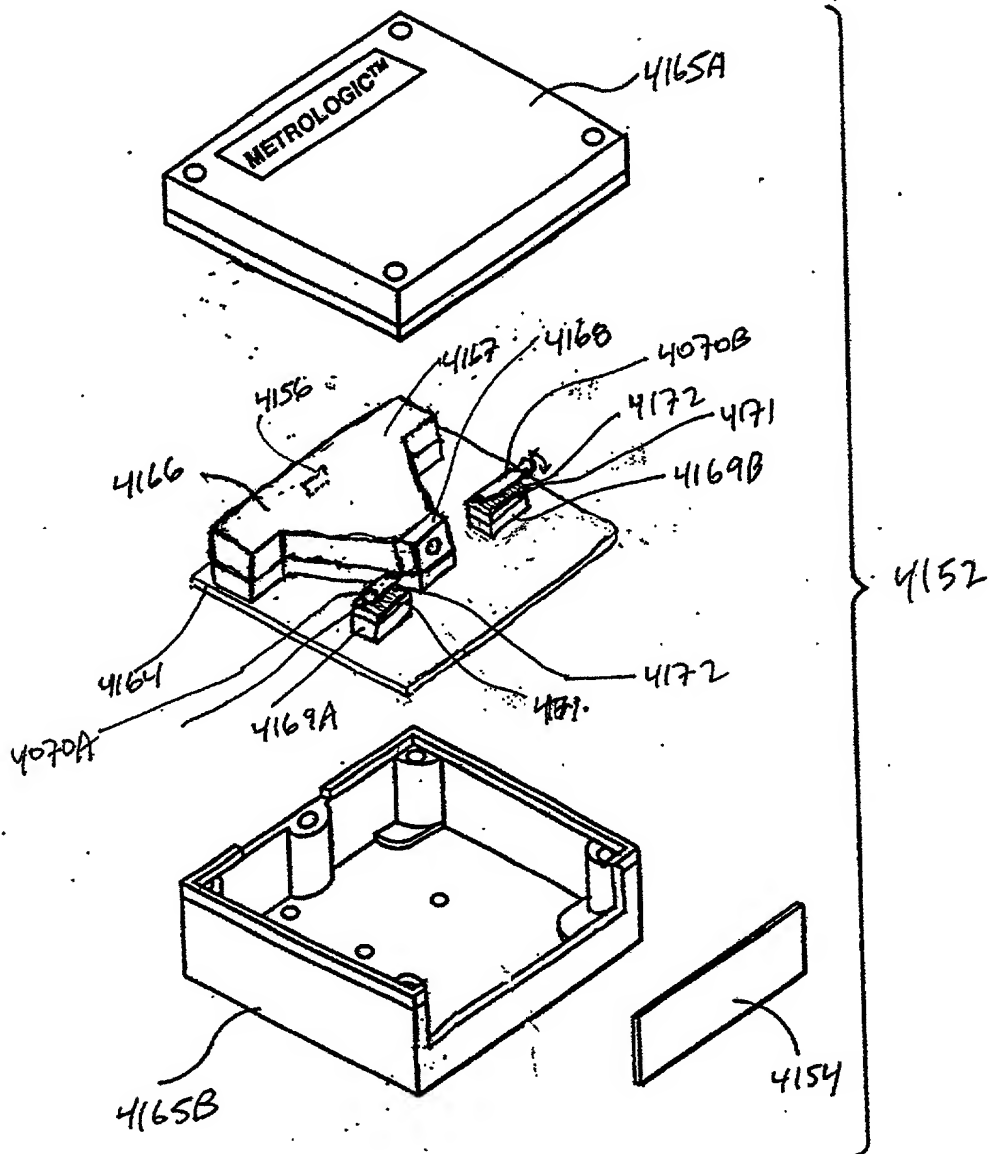


FIG. 57B

Please only LCR
 pin panel
 Fys 178F-86

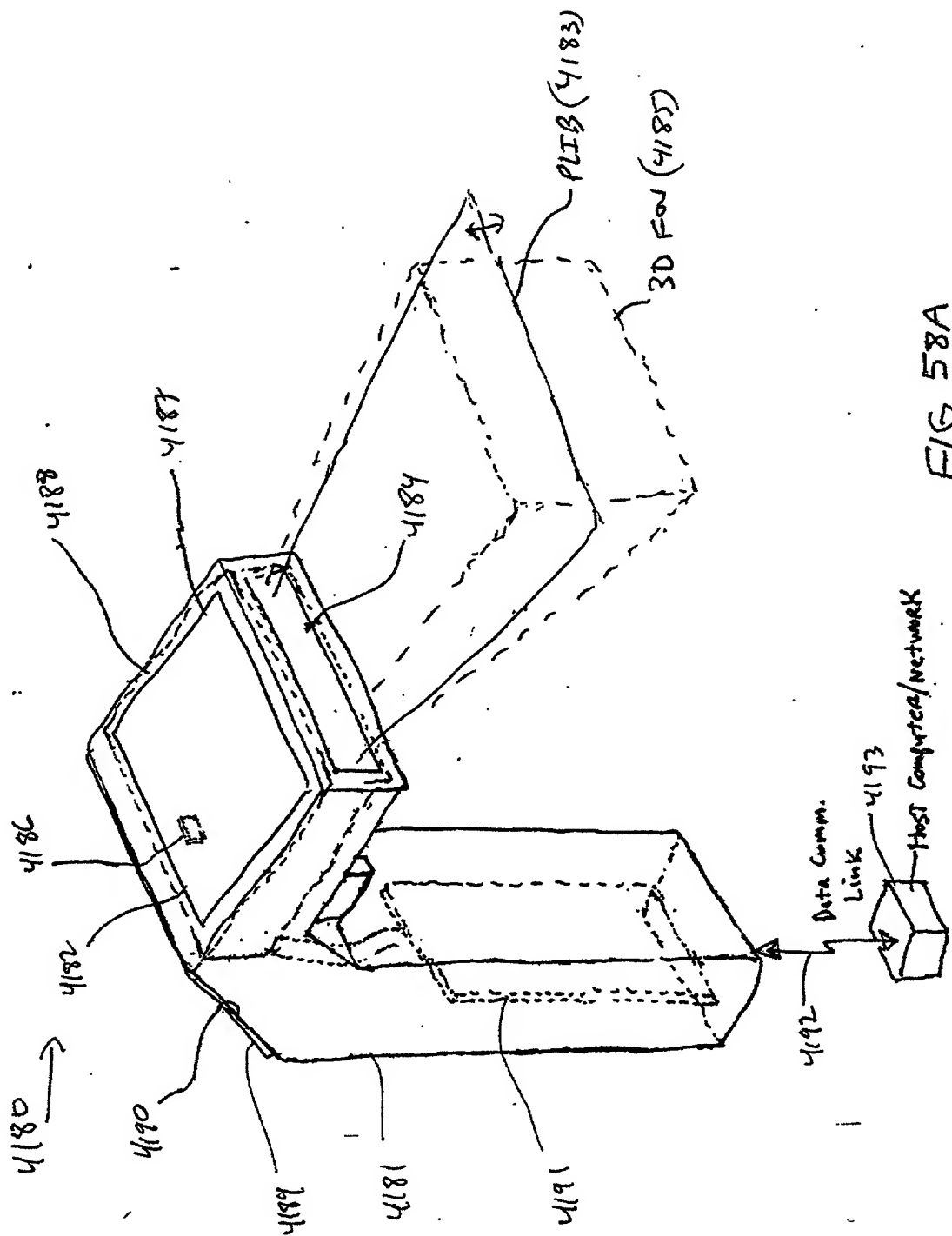


FIG. 58A

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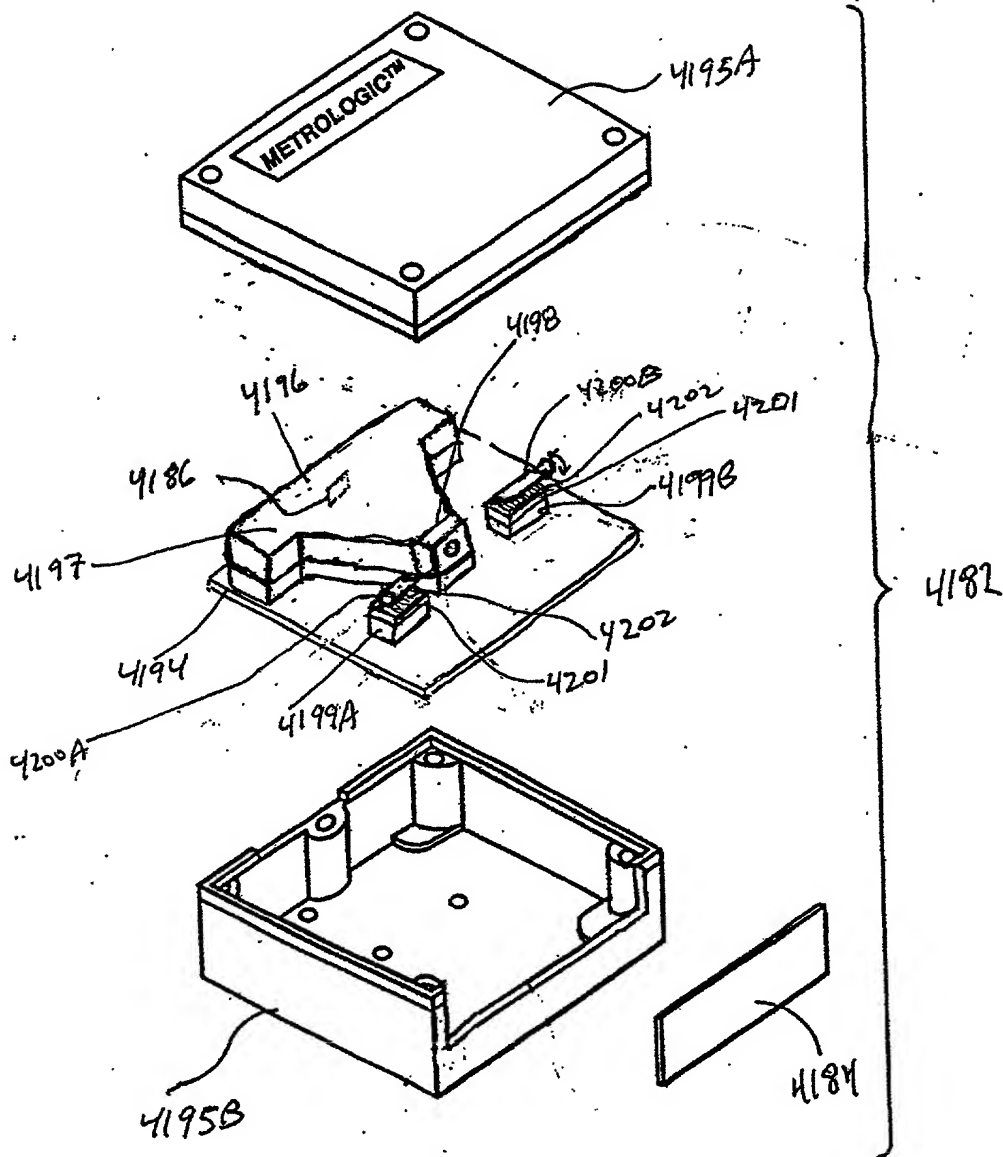


FIG. 58B

HS optical shutter
Fig. 1714A-14B

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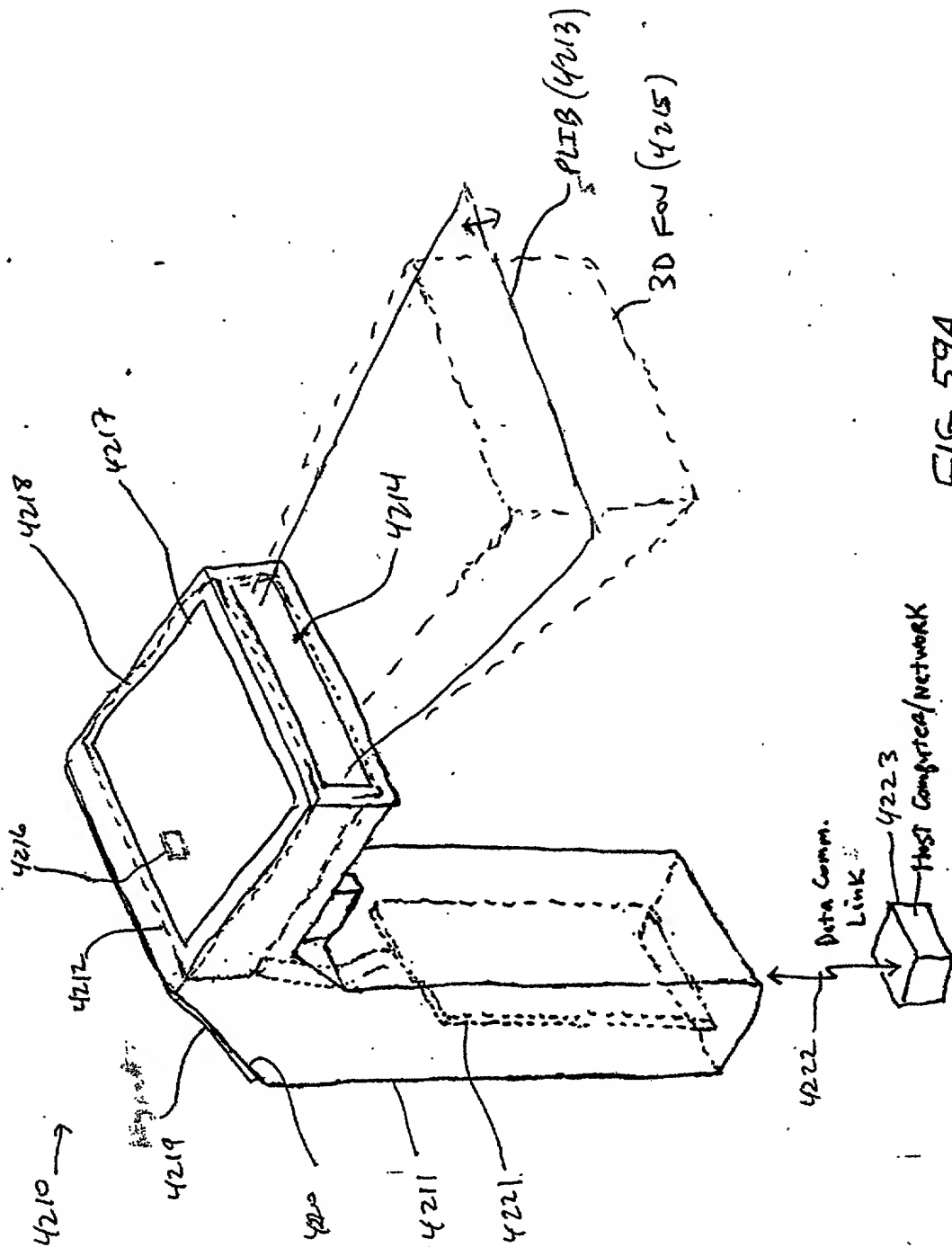


FIG. 59A

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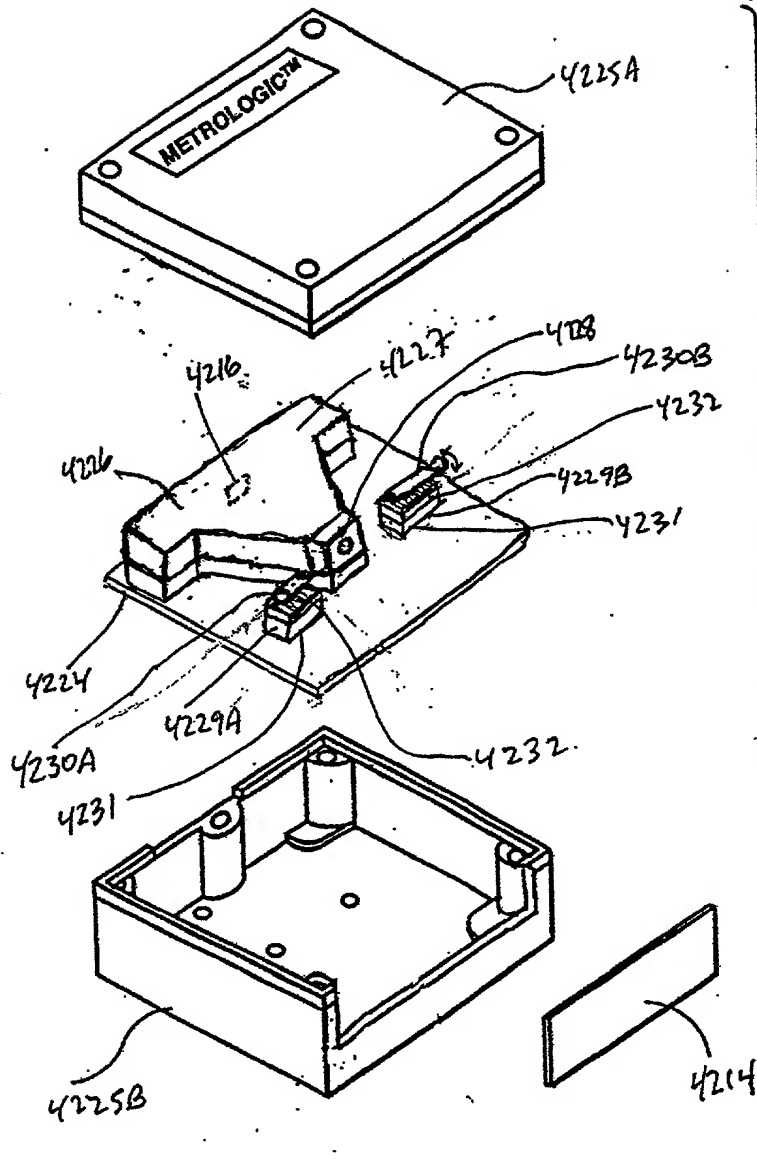


FIG. 59B

UNCLD.
Fig. 1E15A-15B

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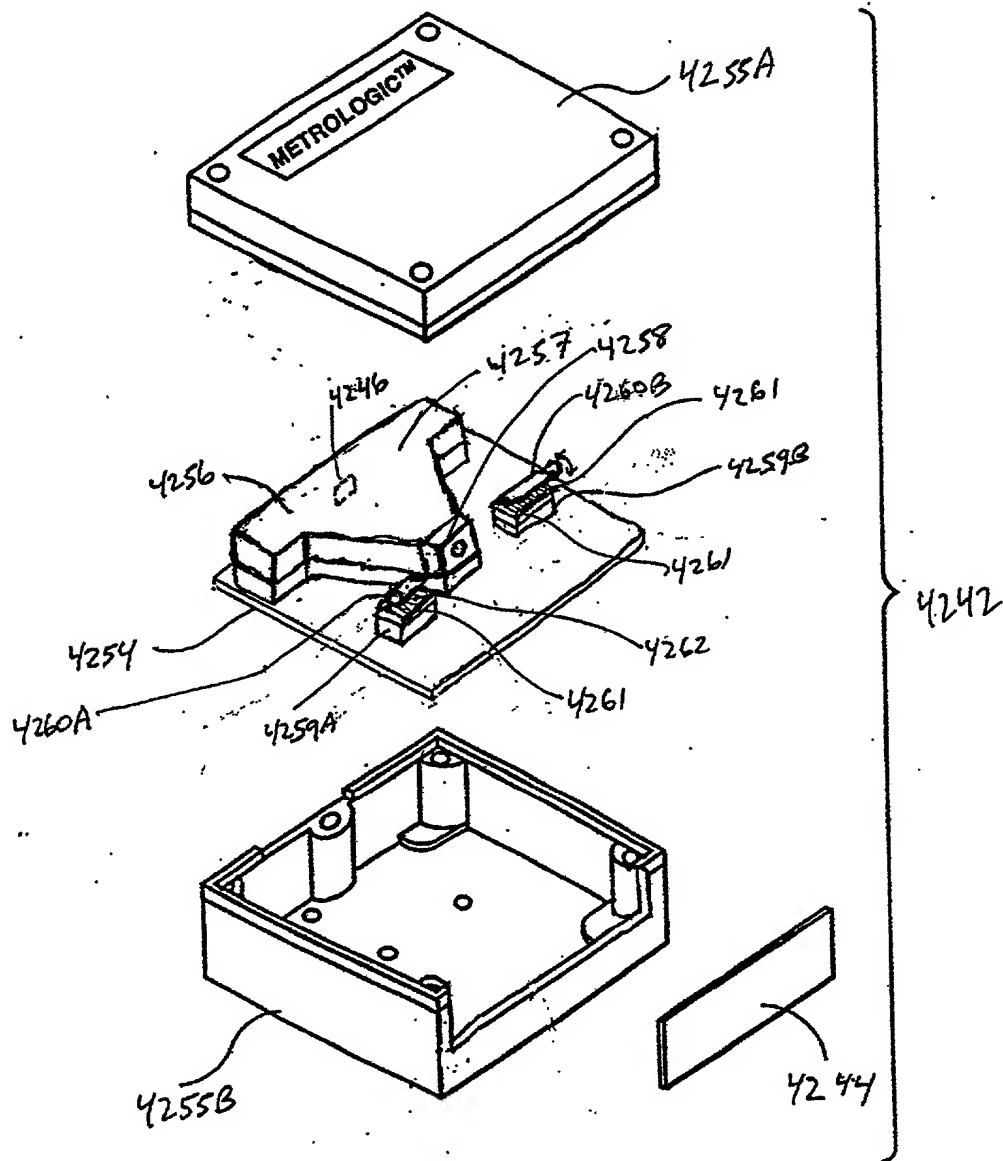
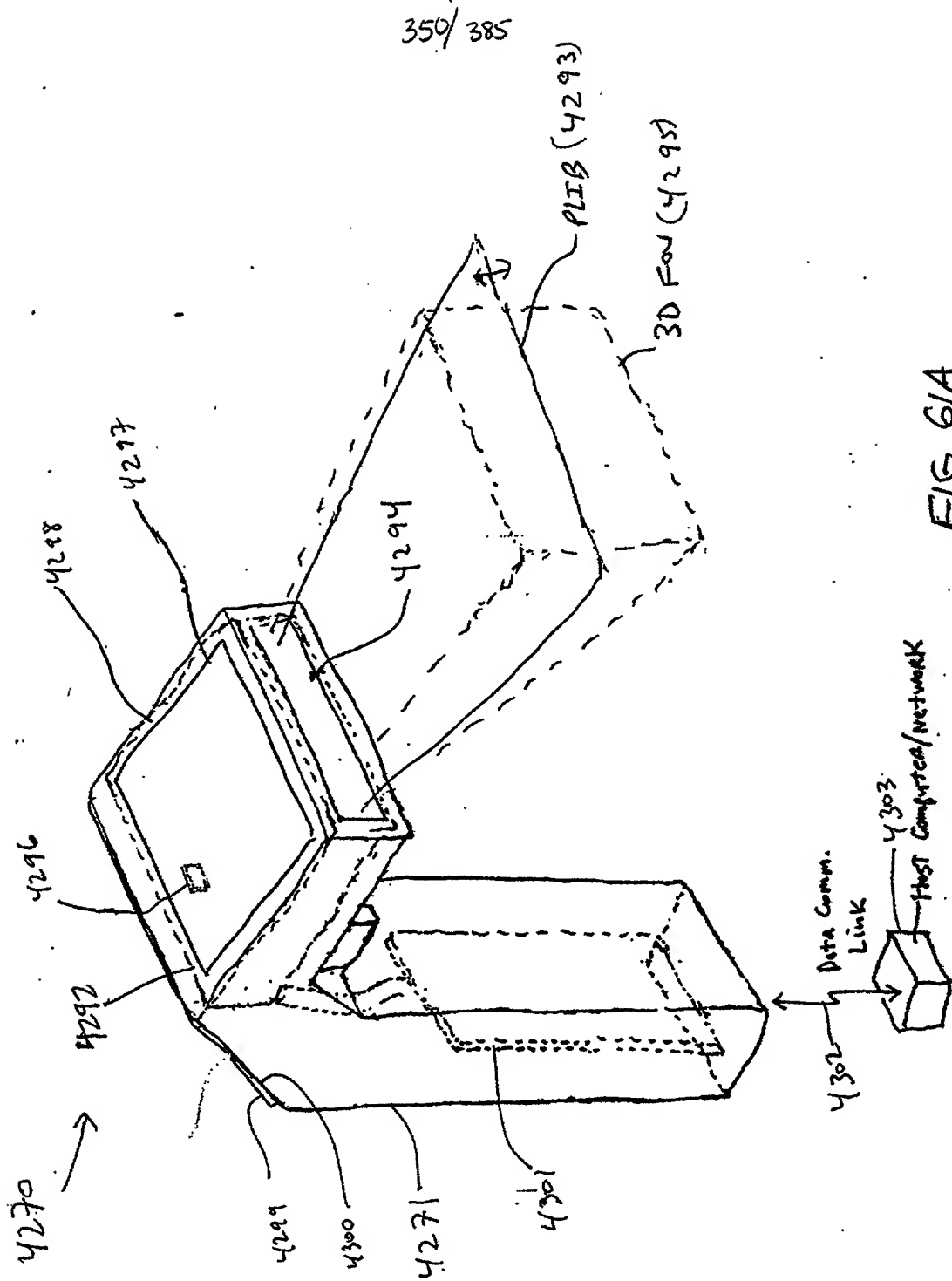


FIG. 60B

Bthalon (Tang. phase mod.)
Fig. 1 I 7A-17B



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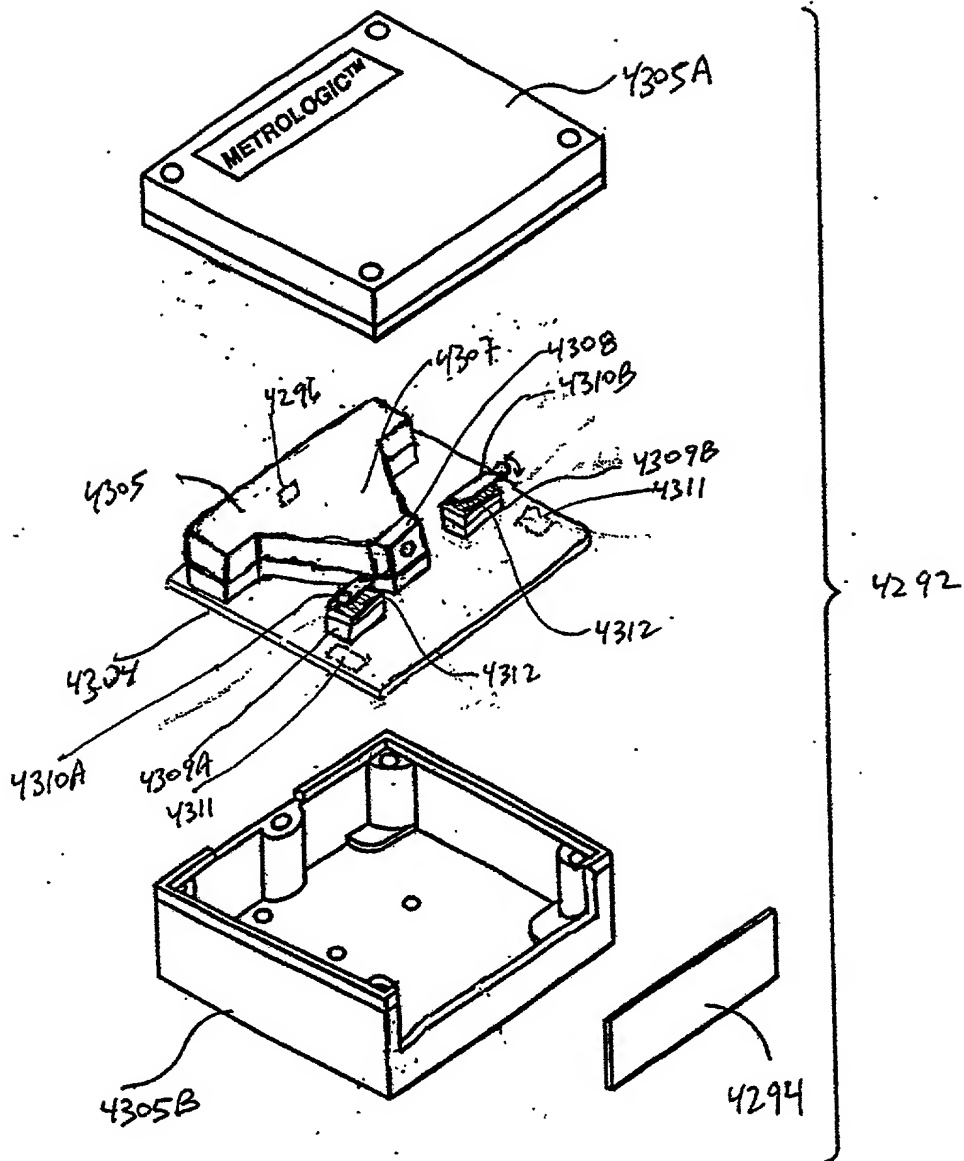
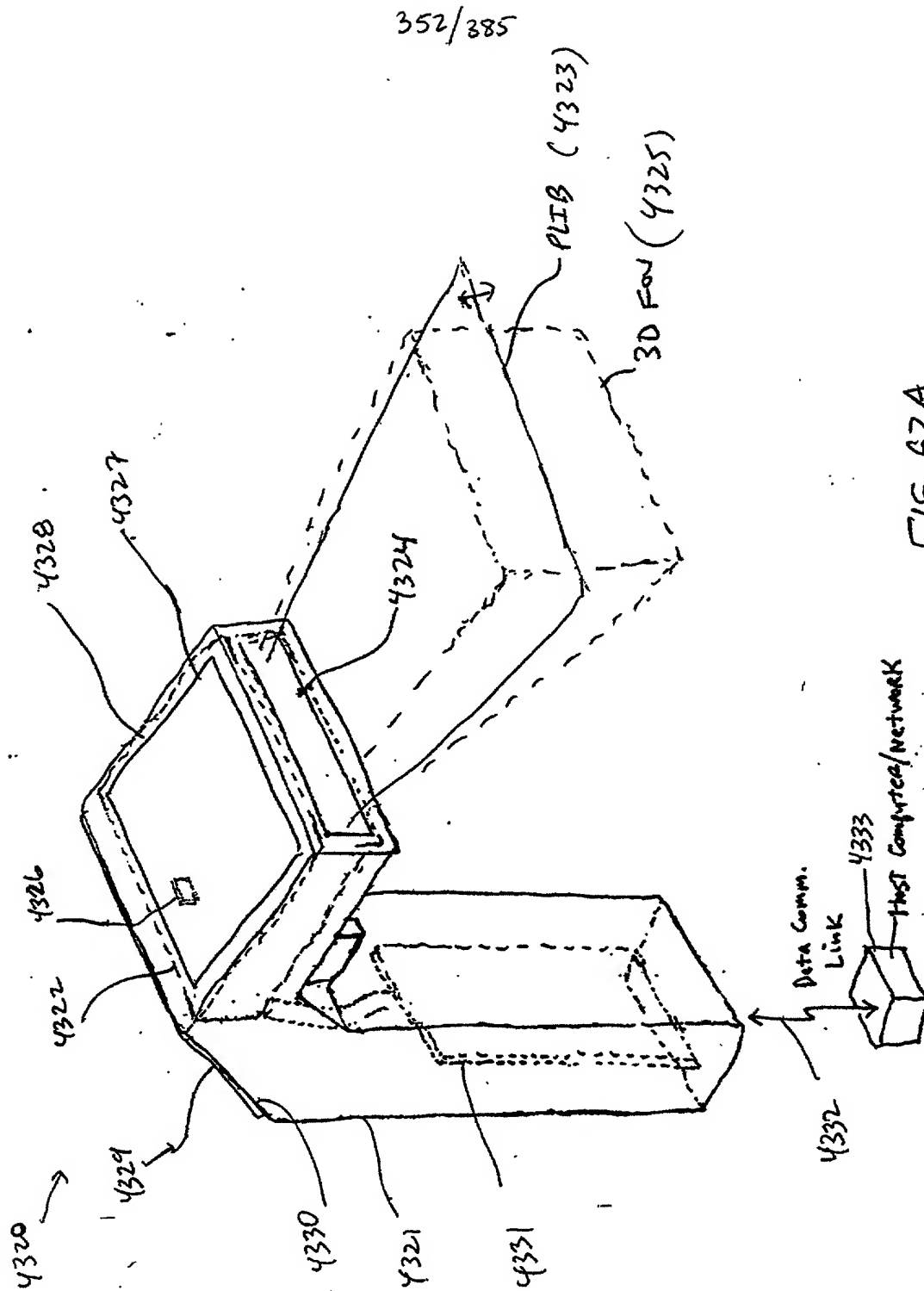


FIG. 61B

mod. hopping

Fig. 119A-19B



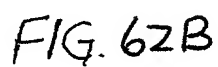
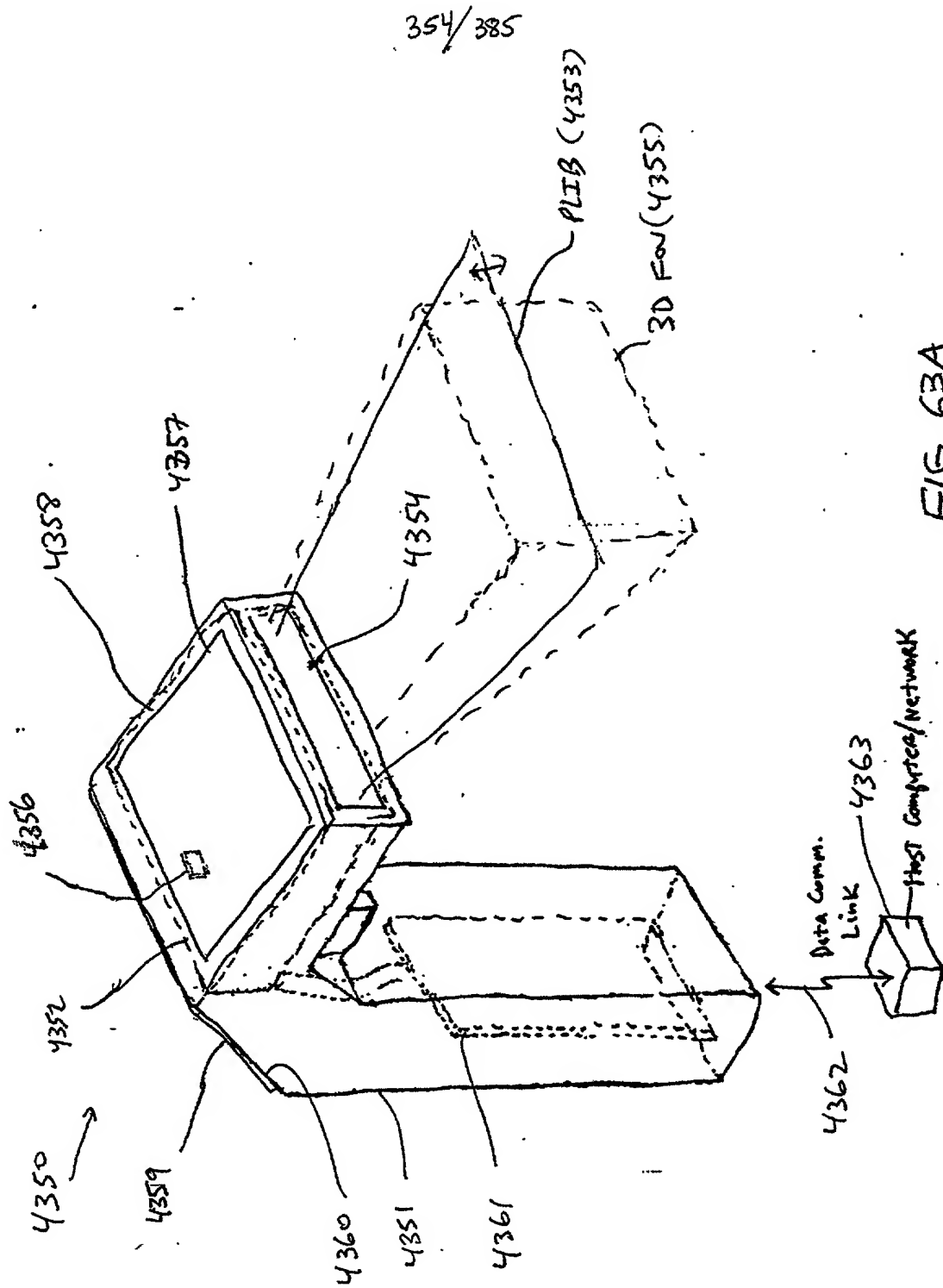
[illegible]

Fig. 1F21A-21D



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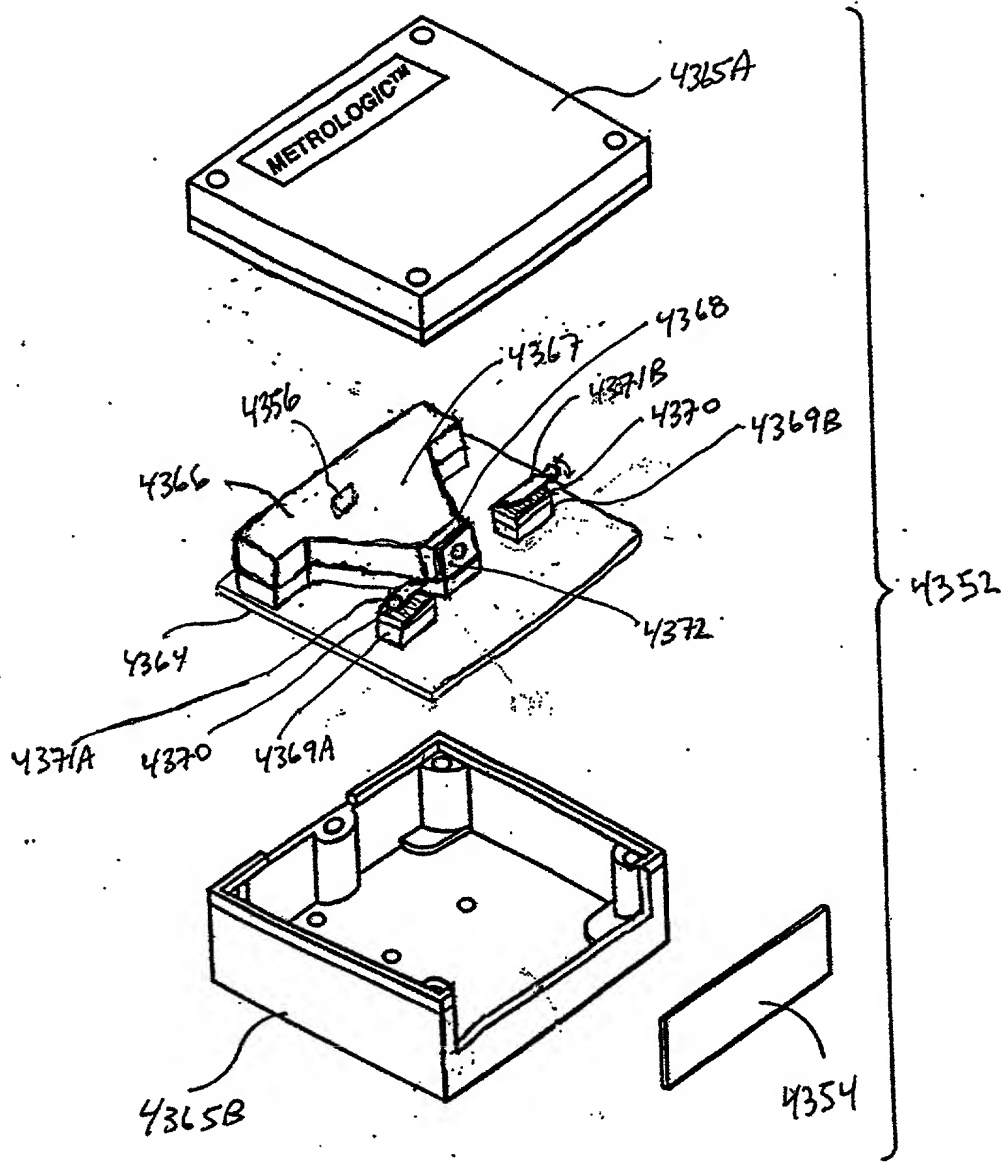


FIG. 63B

ED of
mechanical fastening IPis
Fig 1E
23A-23B

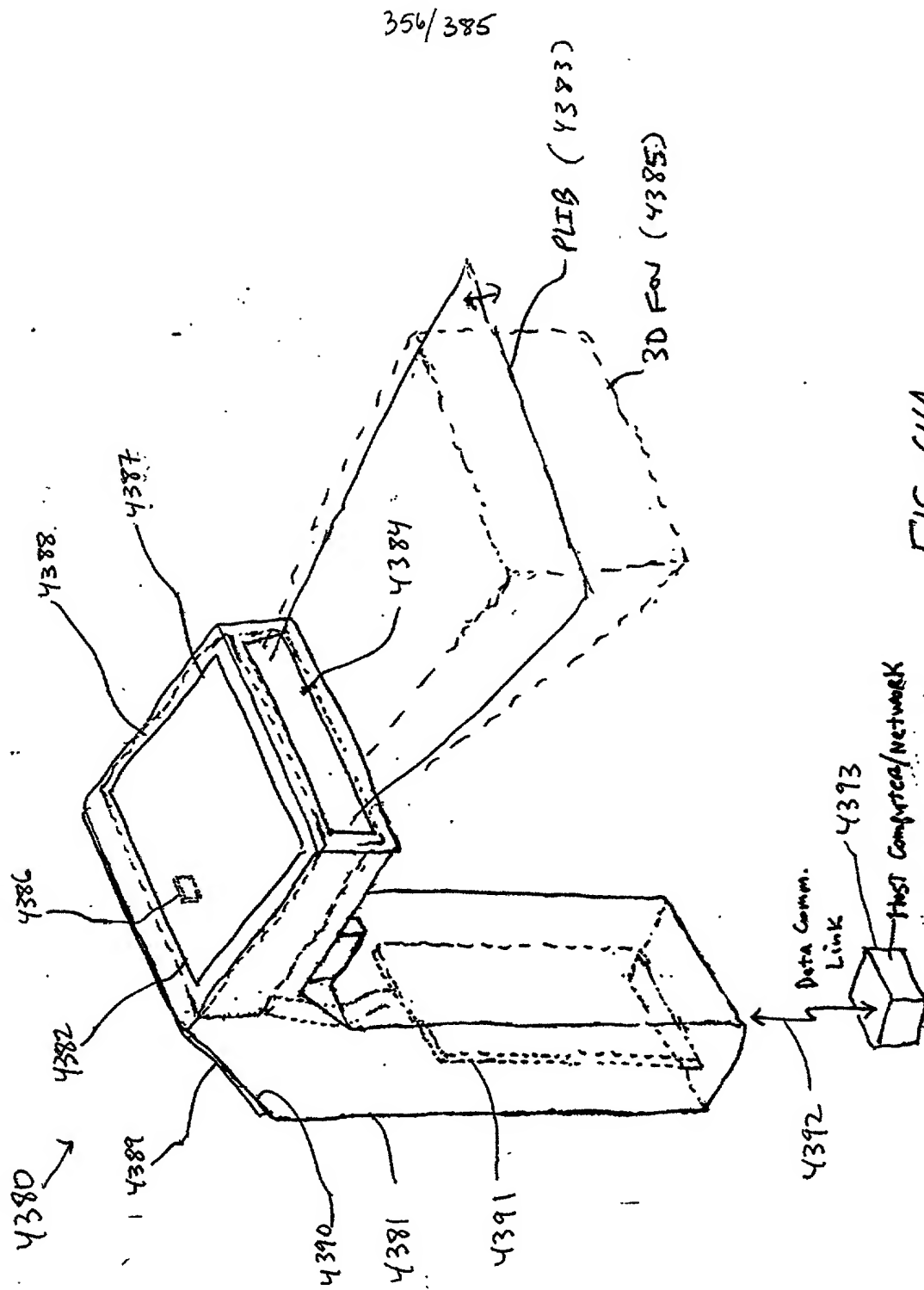


FIG. 64A

2025 RELEASE UNDER E.O. 14176

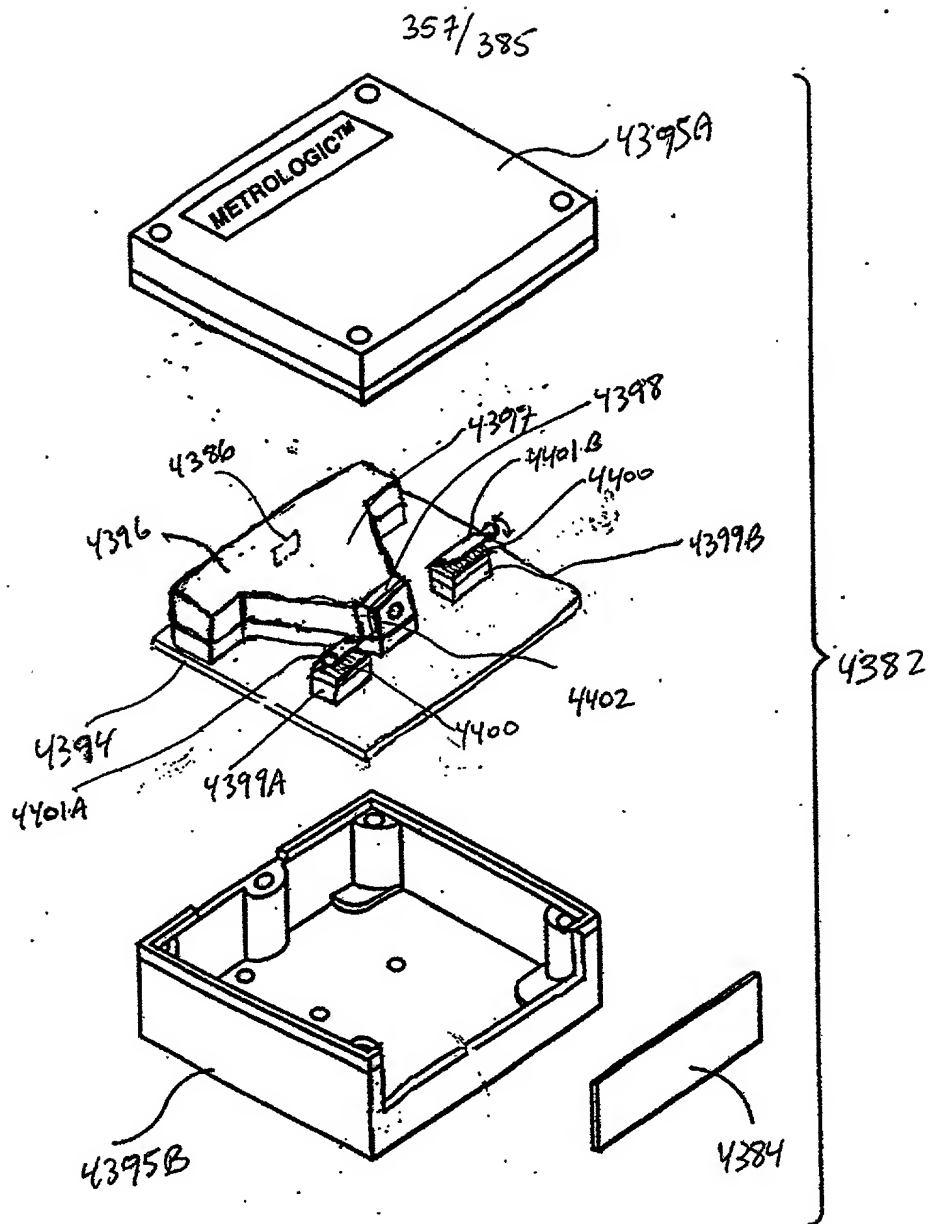


FIG. 64B

* E-optical
Shutter Before
IP Lens
Fig. 1E24A

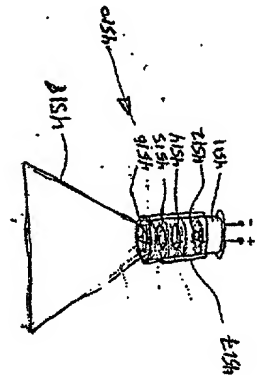
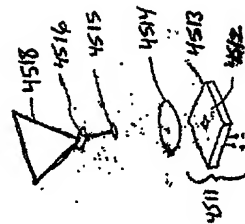
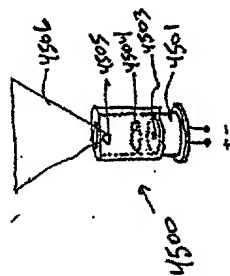
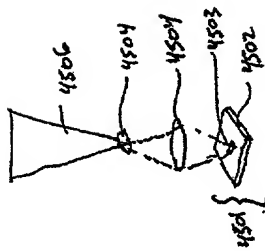
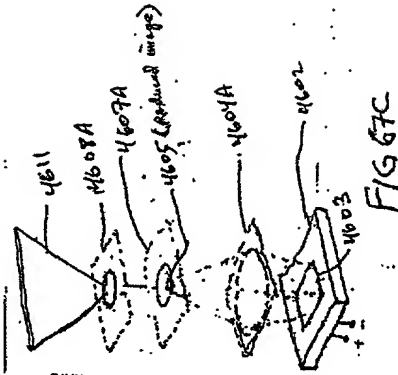
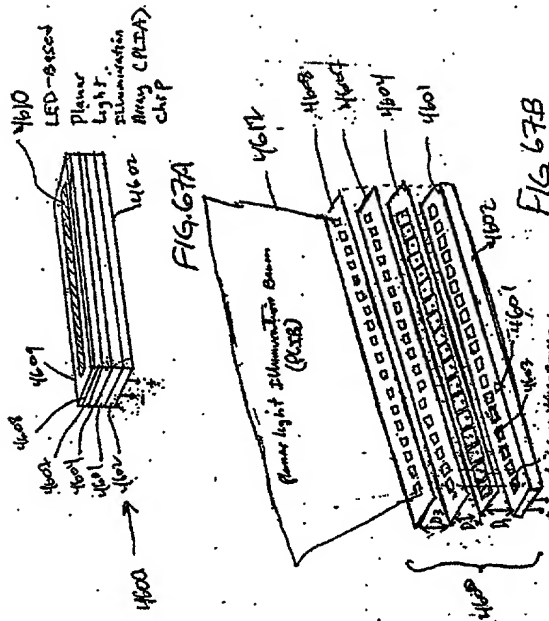


Fig 6B.

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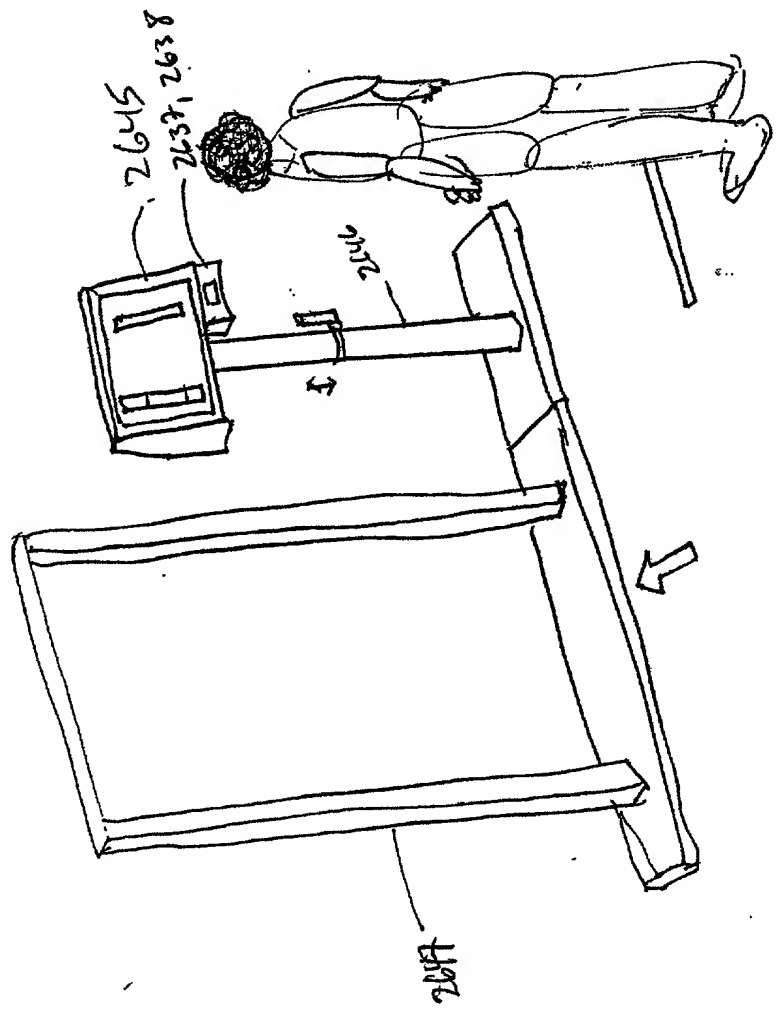


FIG. 68A

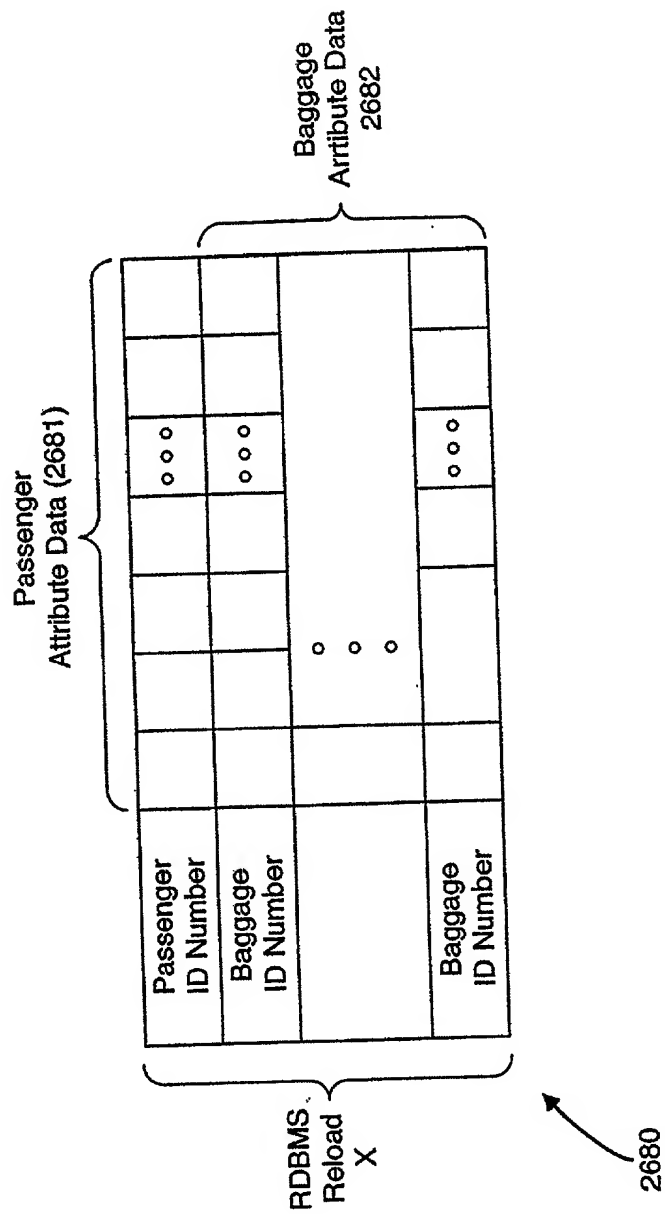


FIG. 68B

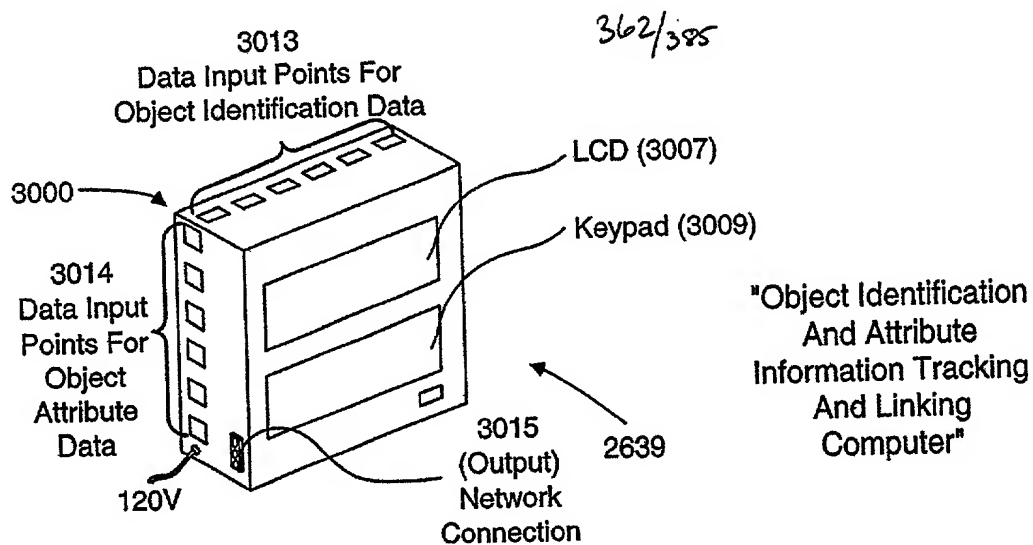


FIG. 68C1

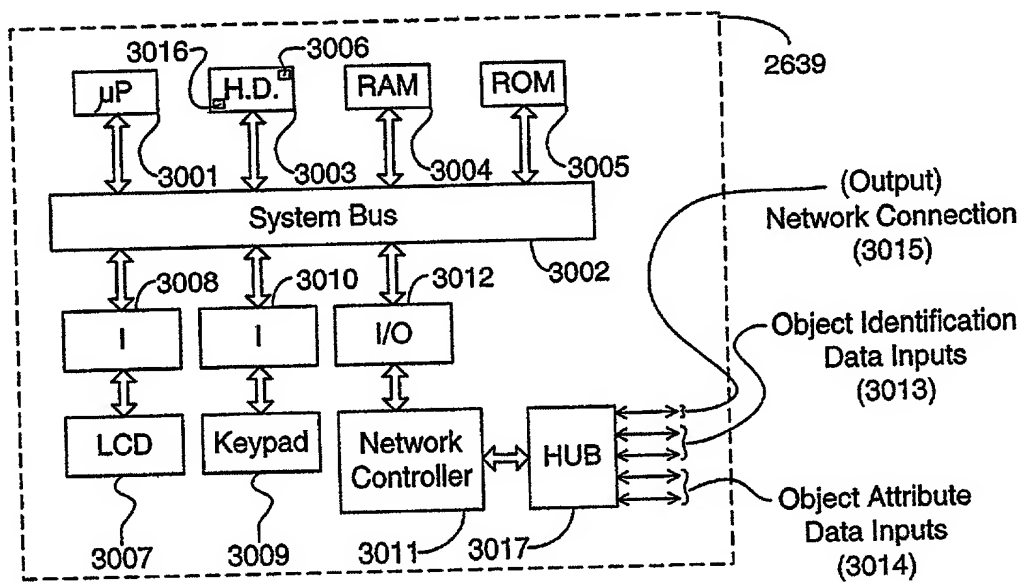


FIG. 68C2

Object Identification And Attribute Information Tracking And Linking Computer System.

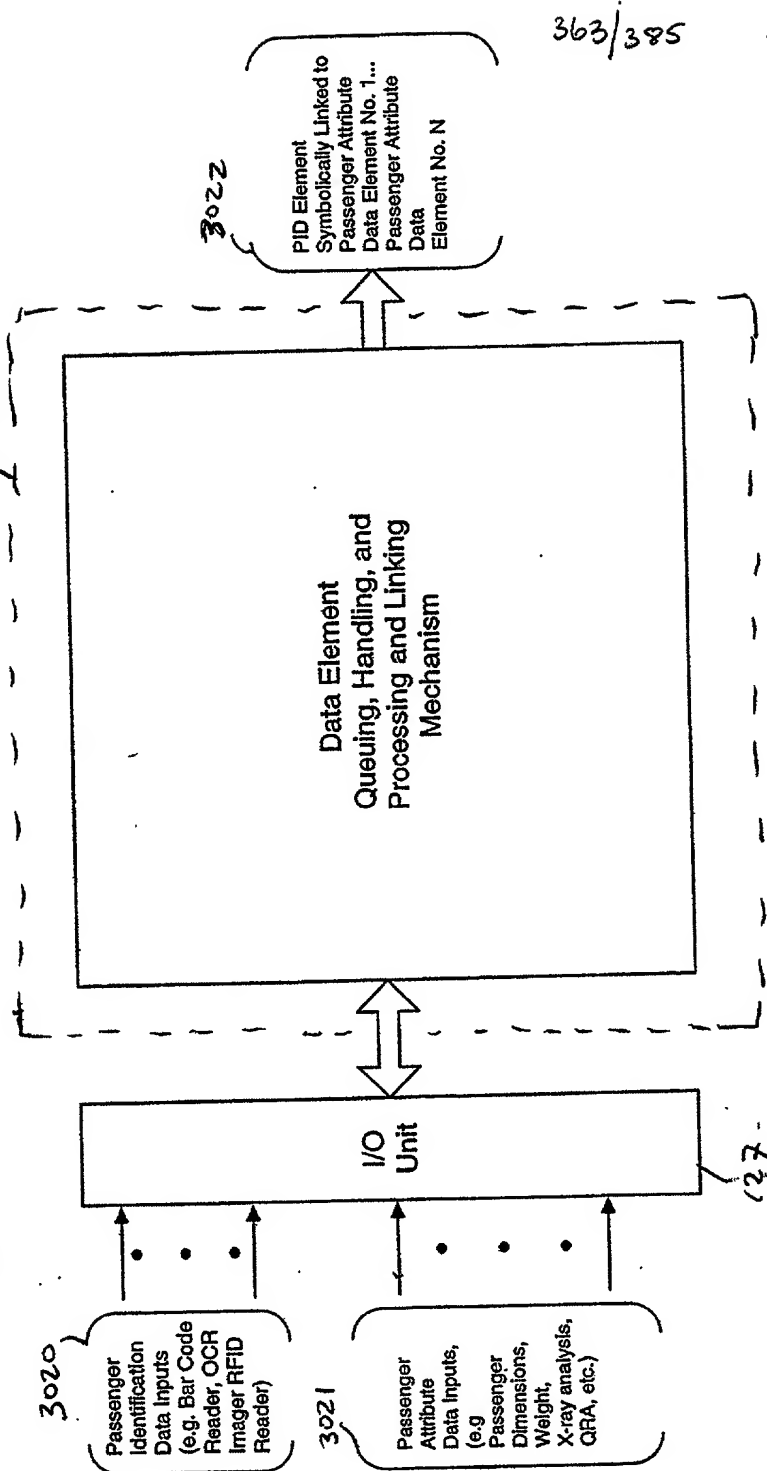


FIG. 68C3

Data Element Queuing, Handling, and Processing Subsystem Employed In The Object Identification And Attribute Acquisition System Of The Present Invention. (131)

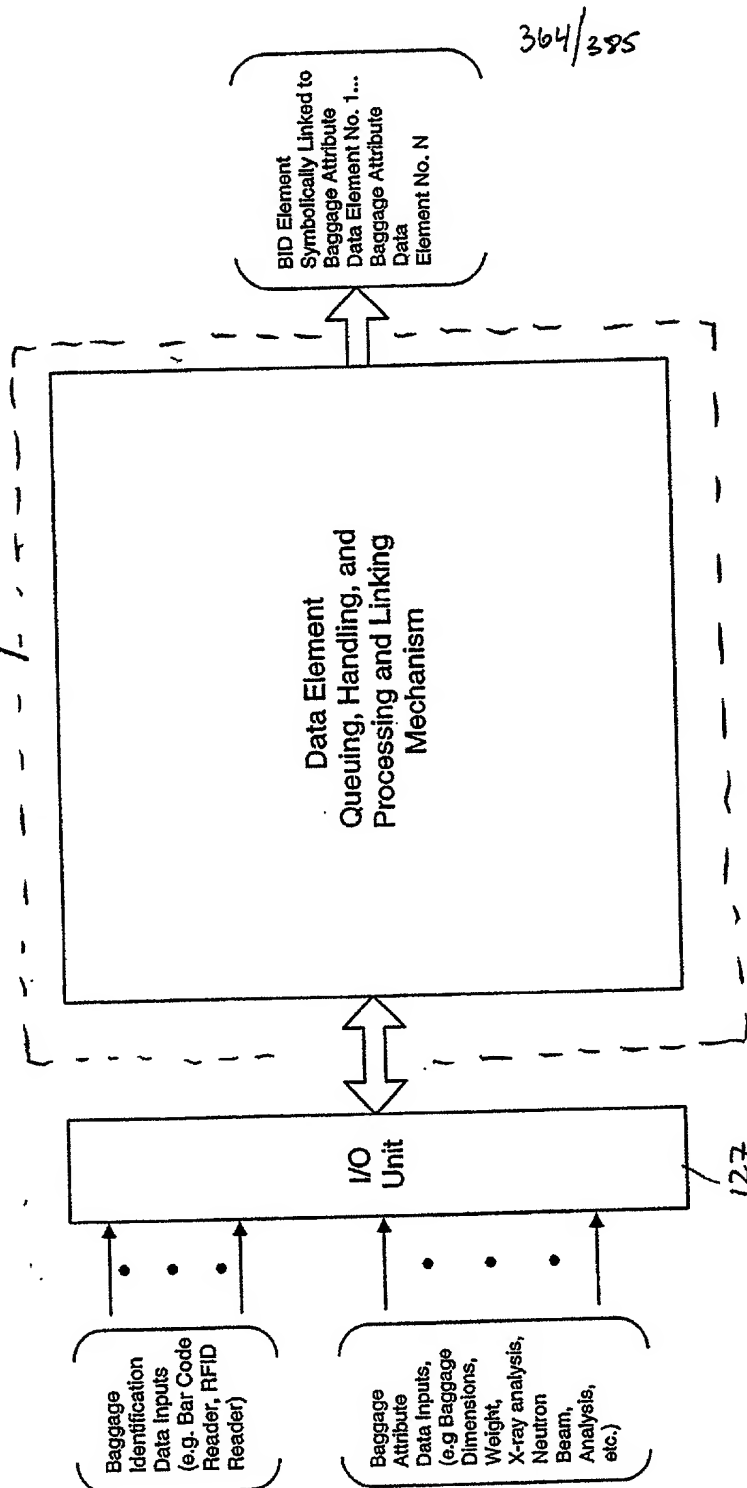


FIG. 68C4

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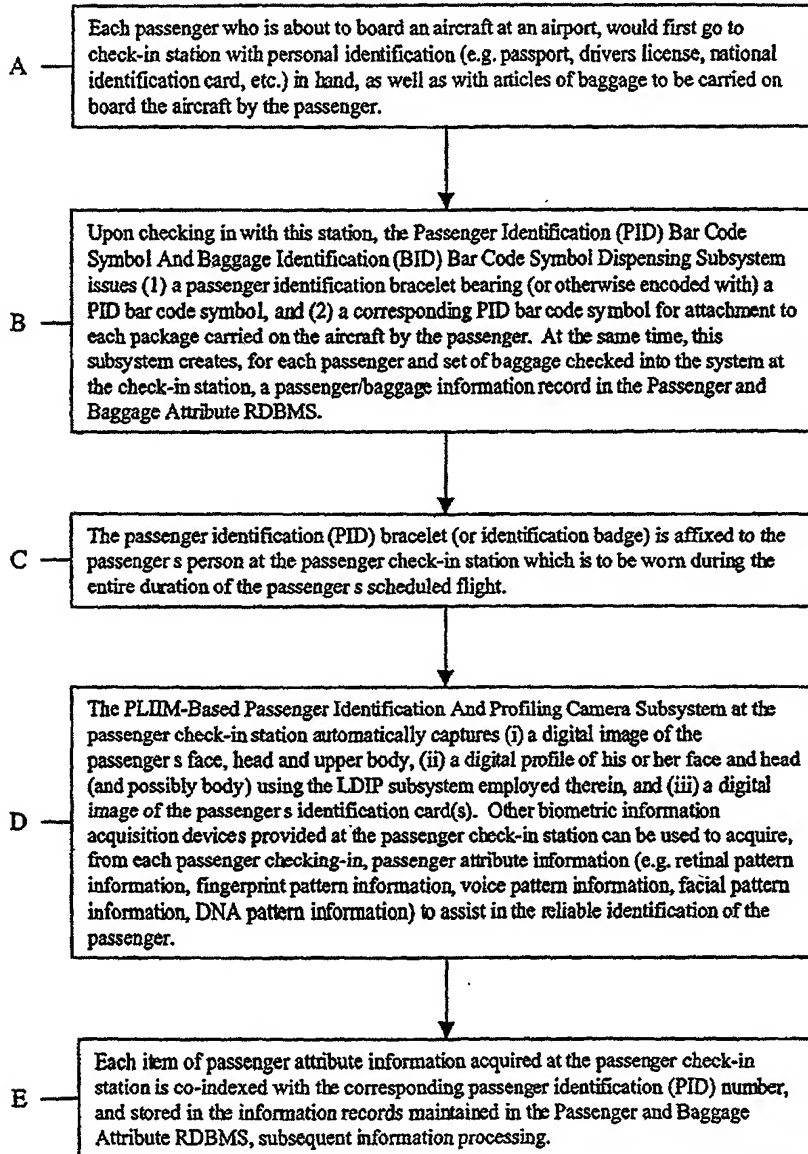


FIG. 68D1

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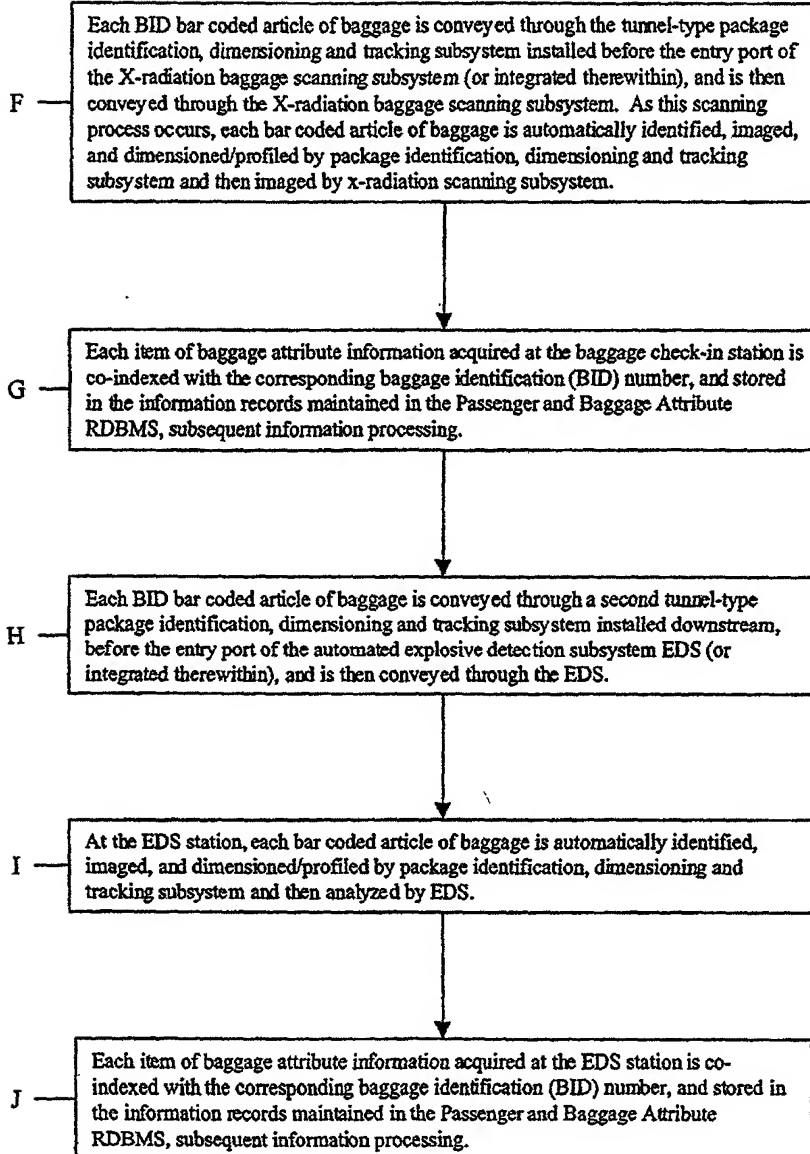


FIG. 68D2

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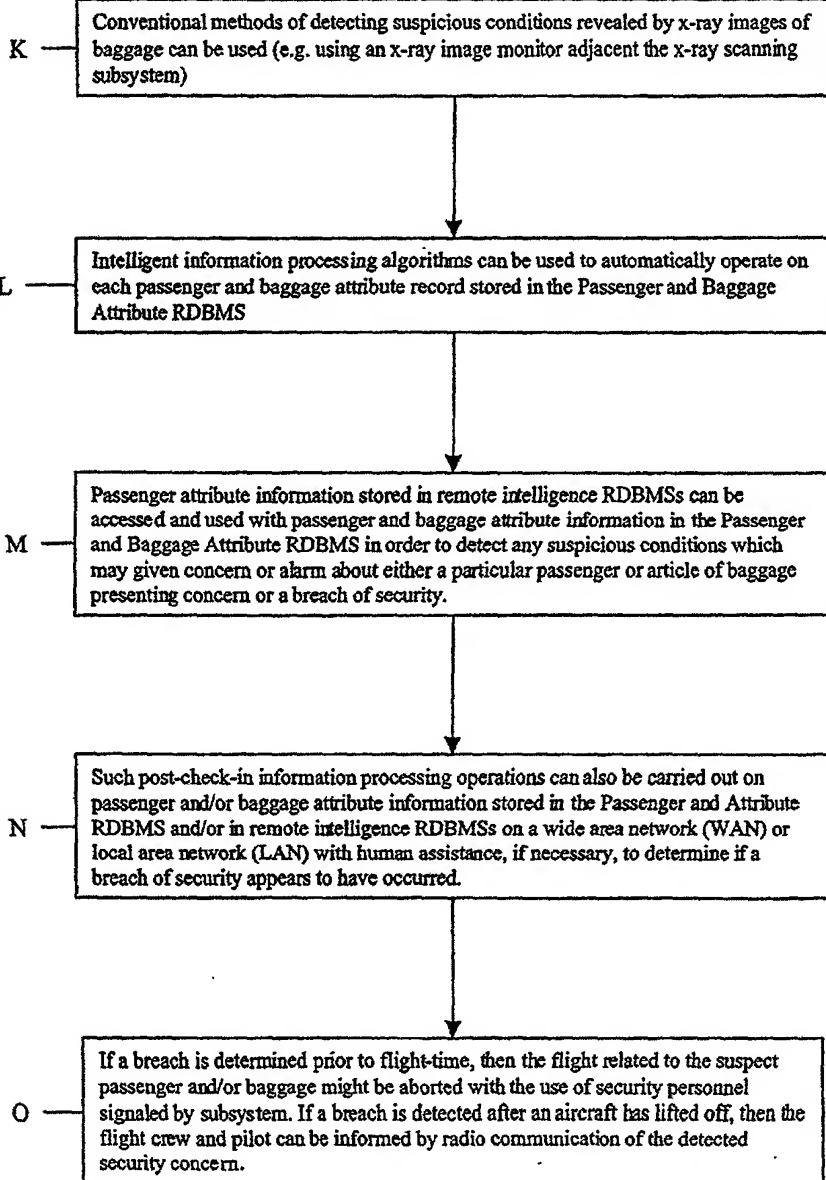
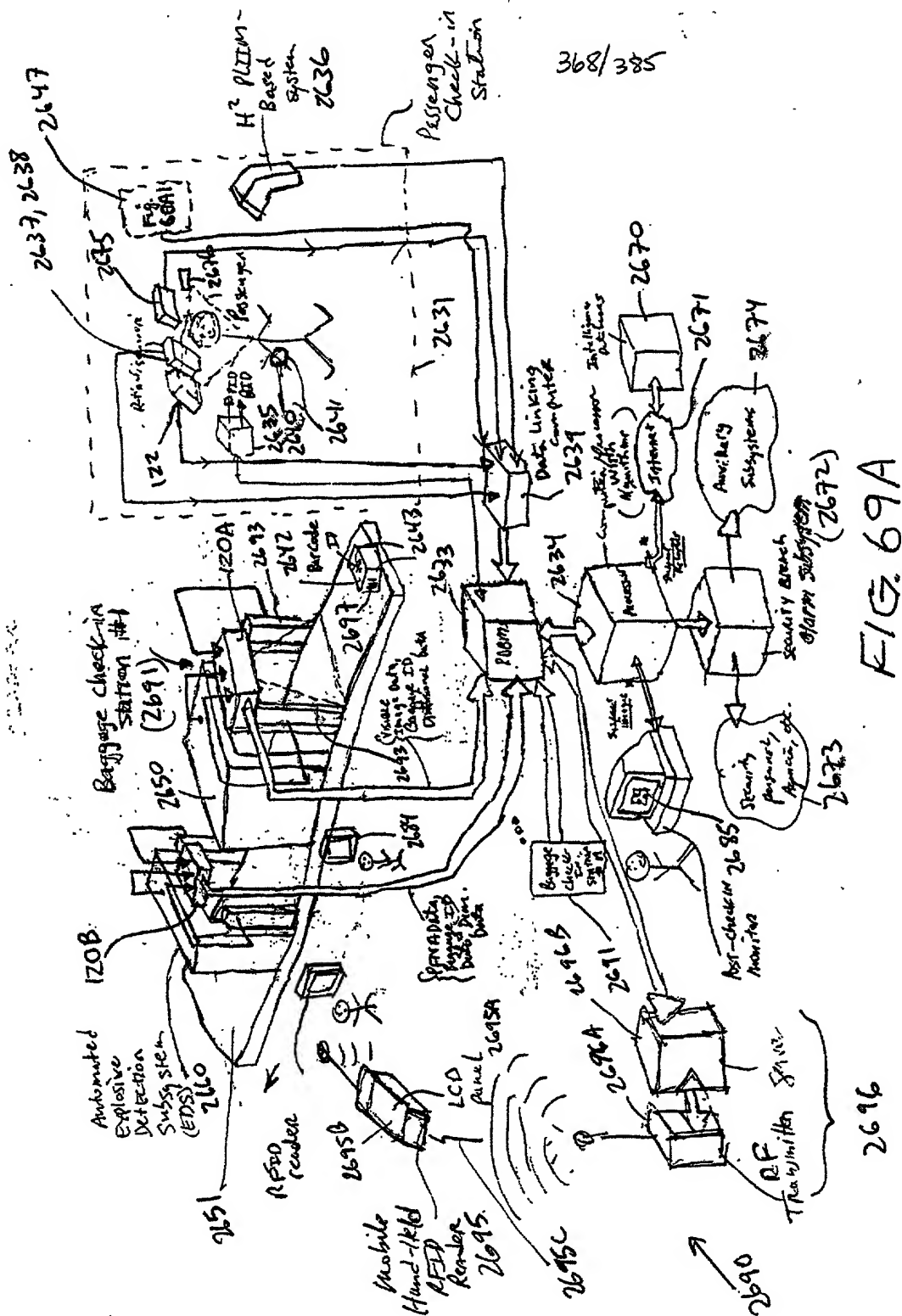


FIG. 68D3



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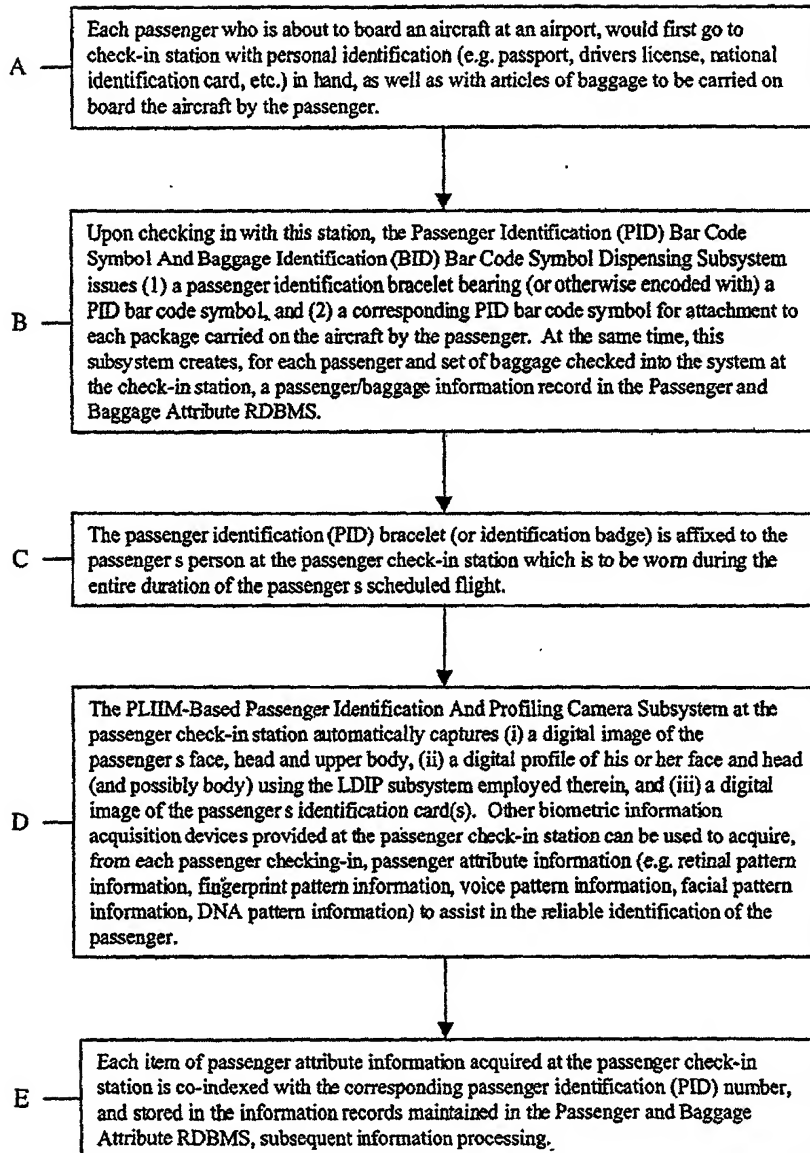


FIG. 69B1

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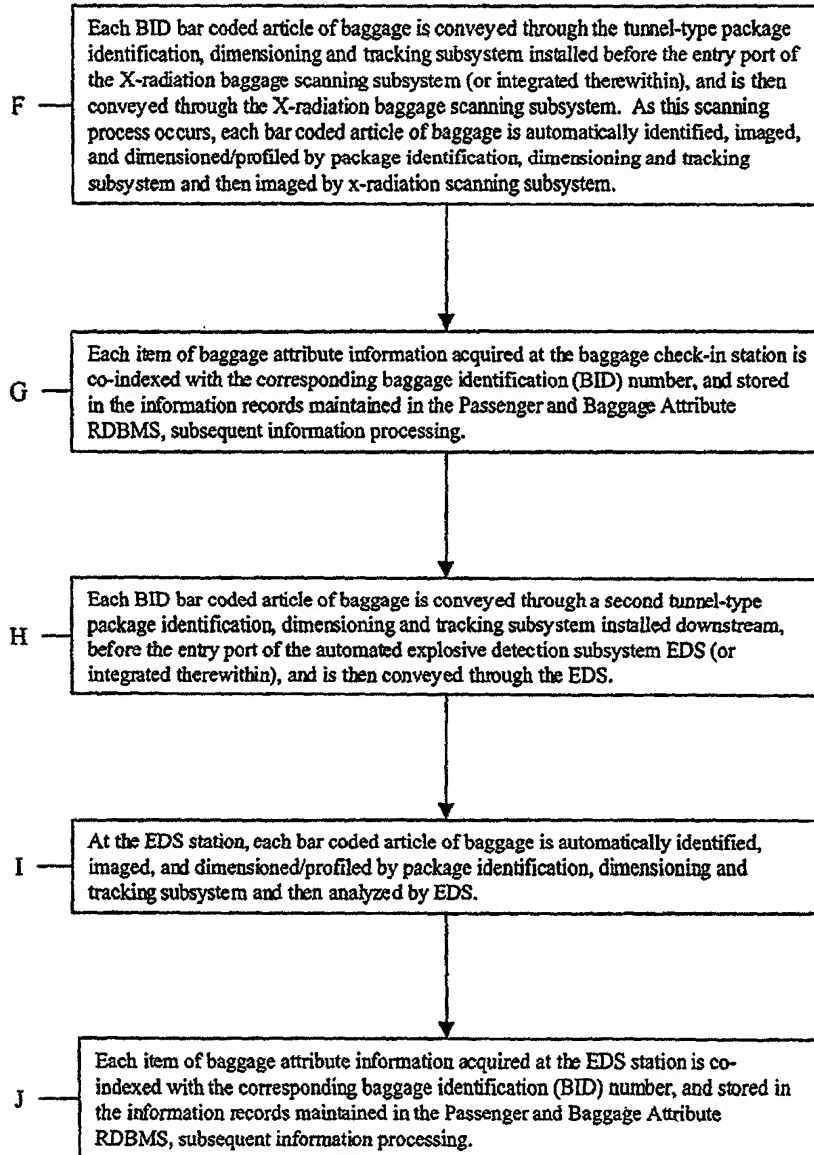


FIG 69B2

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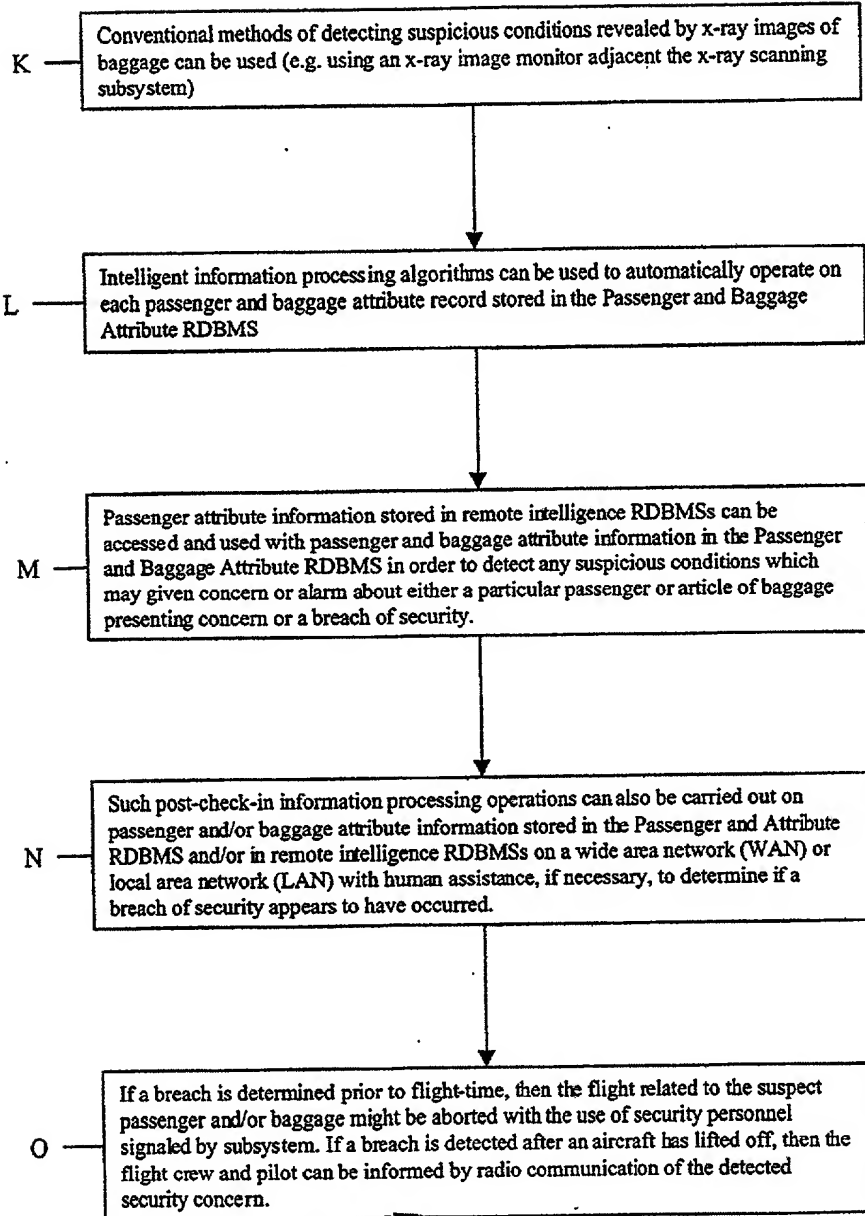
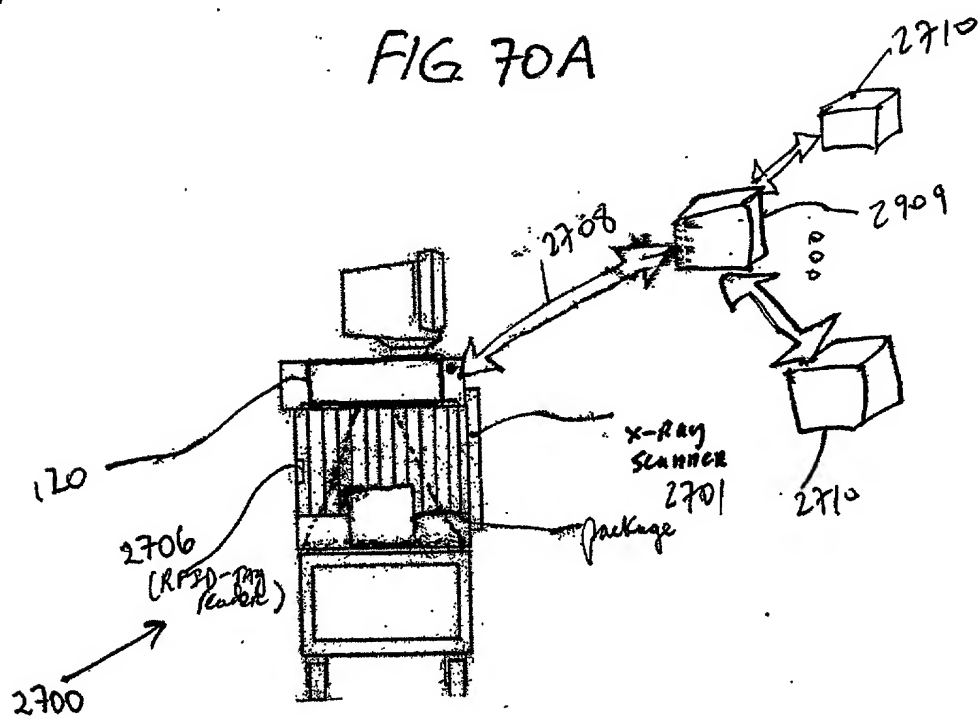
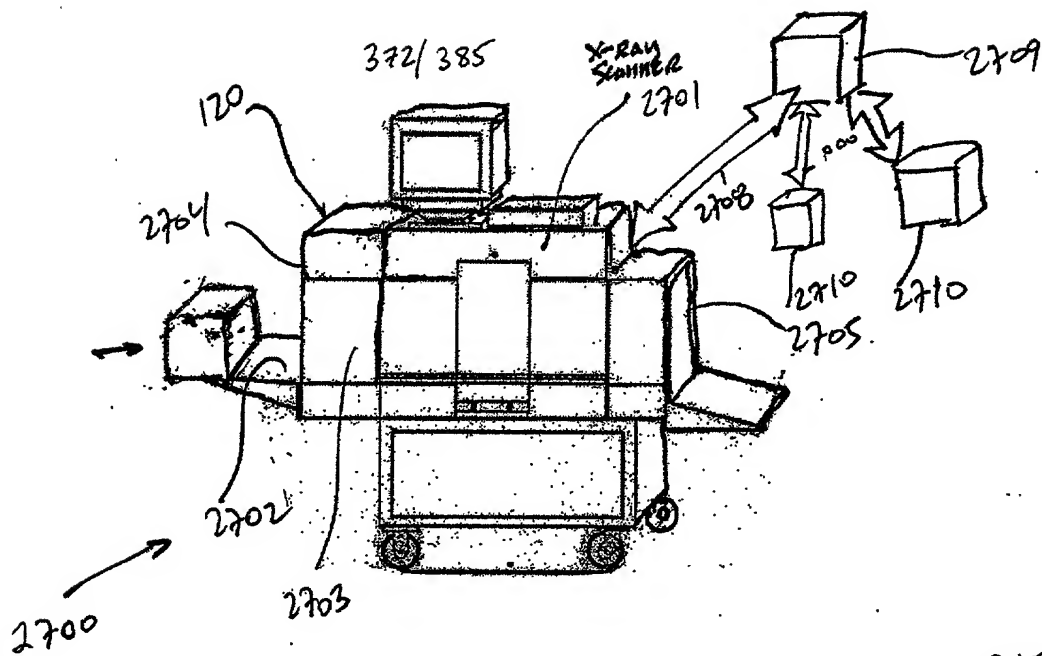


FIG. 69B3



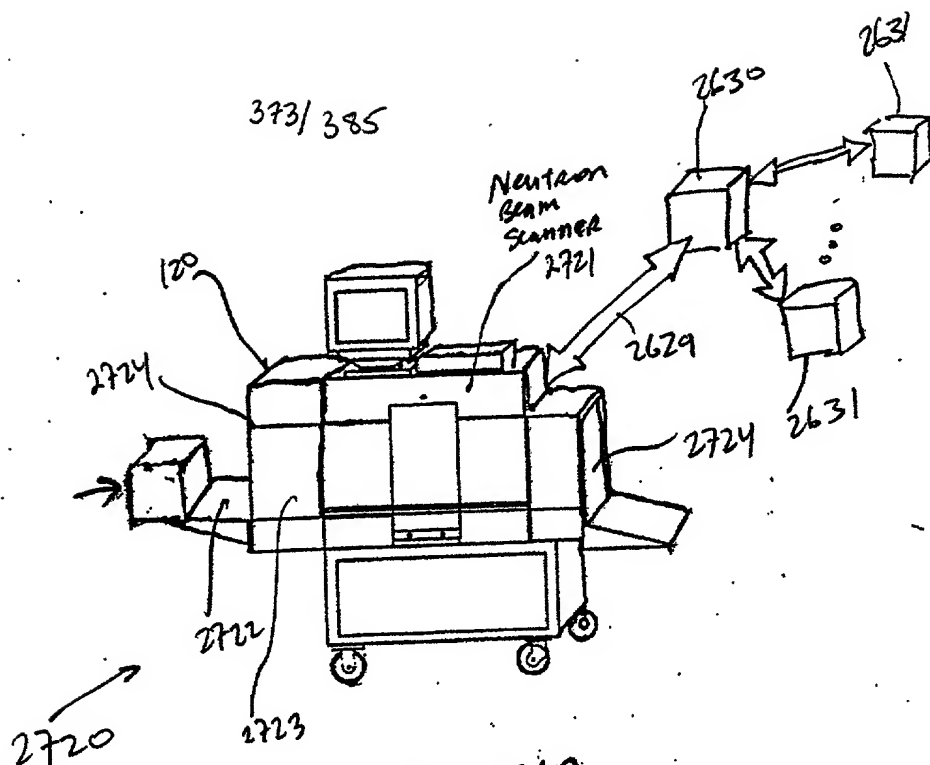


FIG 71A

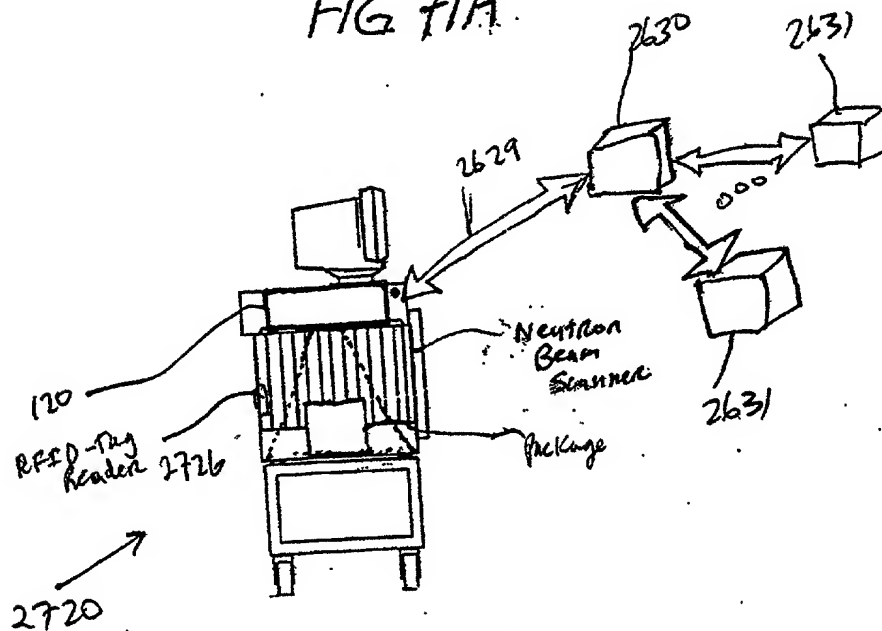


FIG. 7B

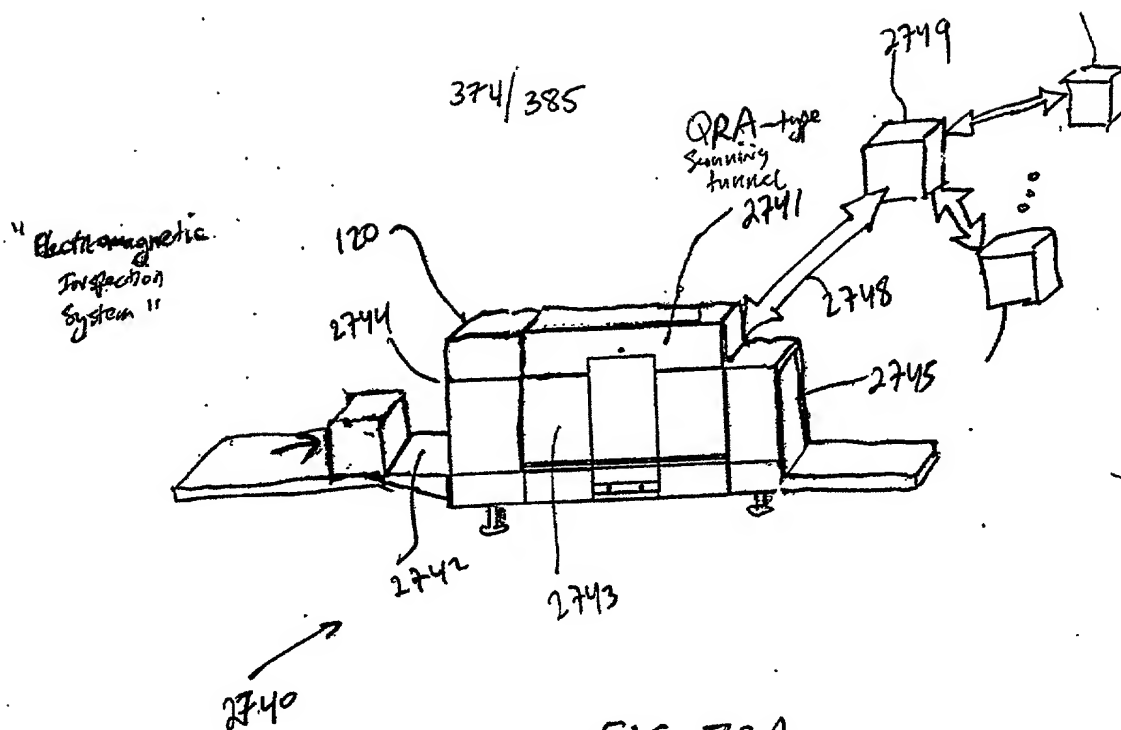


FIG 72A

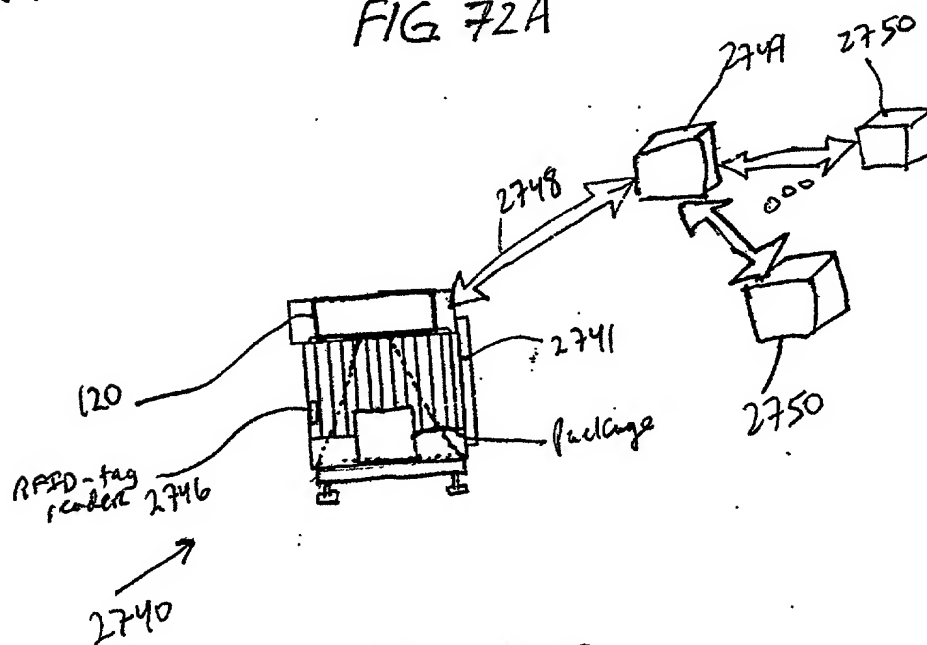
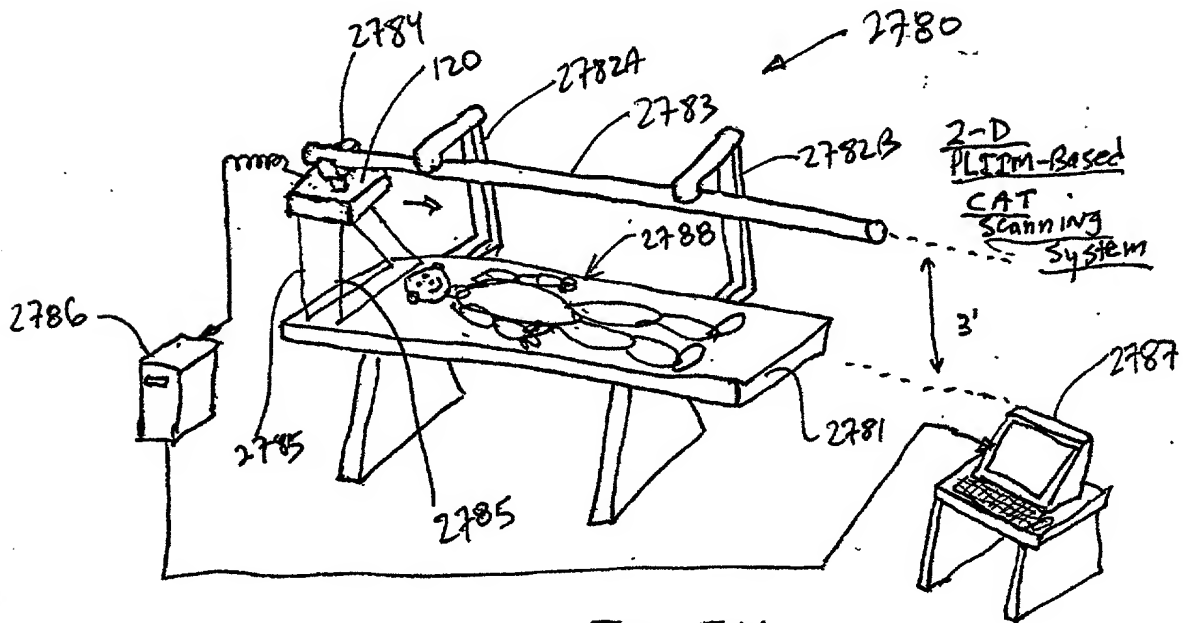
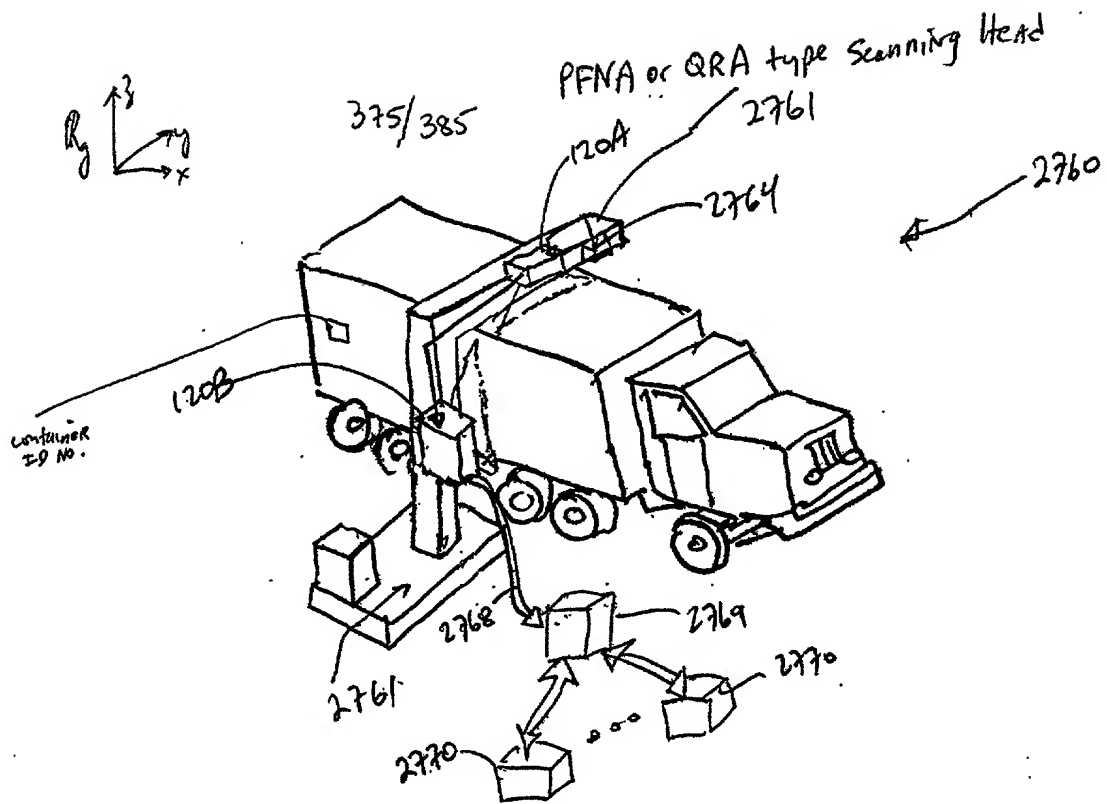
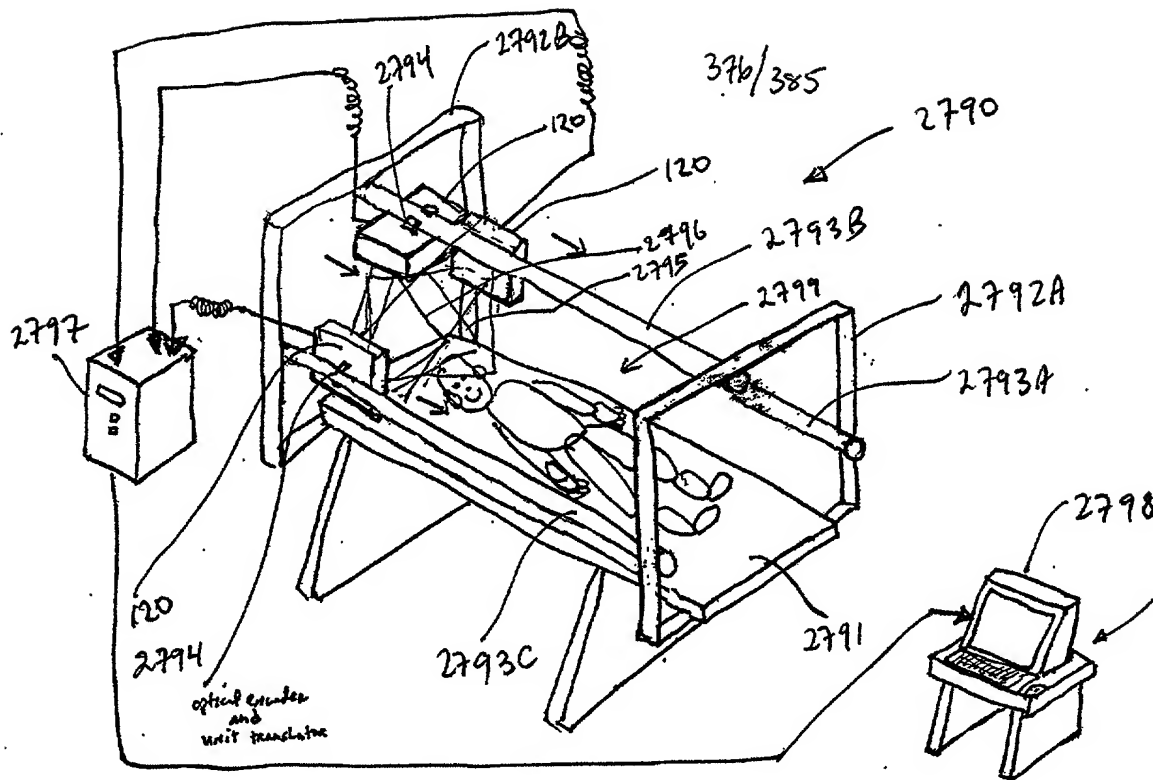


FIG 72B





3-D PLIM-Based
CAT Medical Scanning
System

FIG. 75

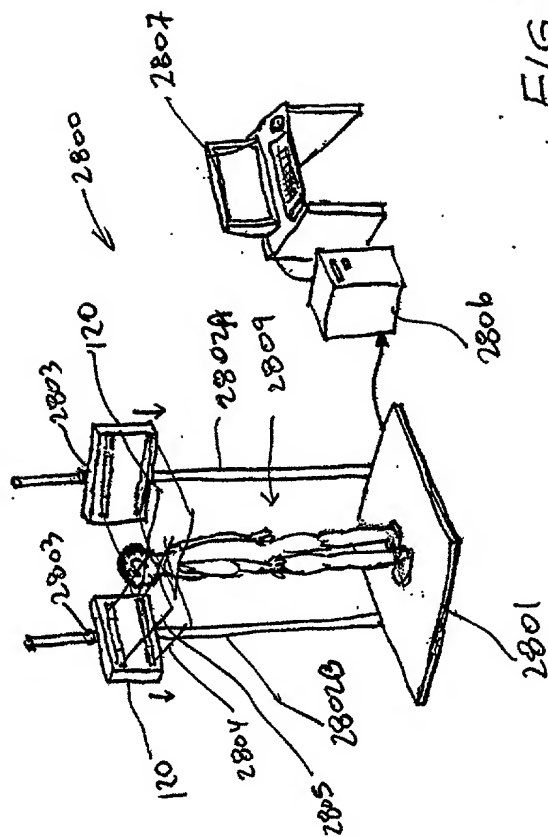


FIG. 76

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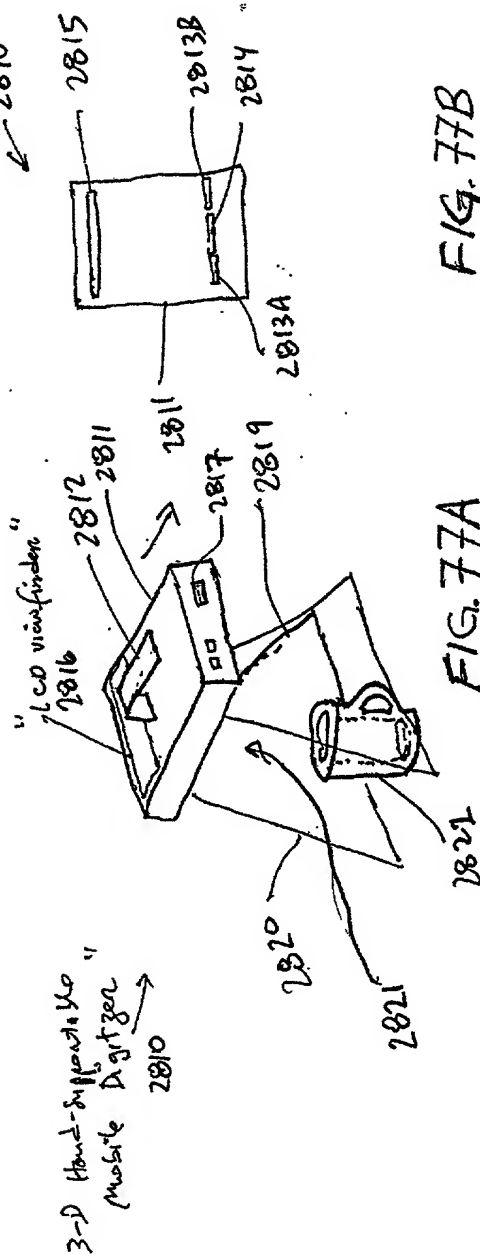


FIG. 77A

FIG. 77B

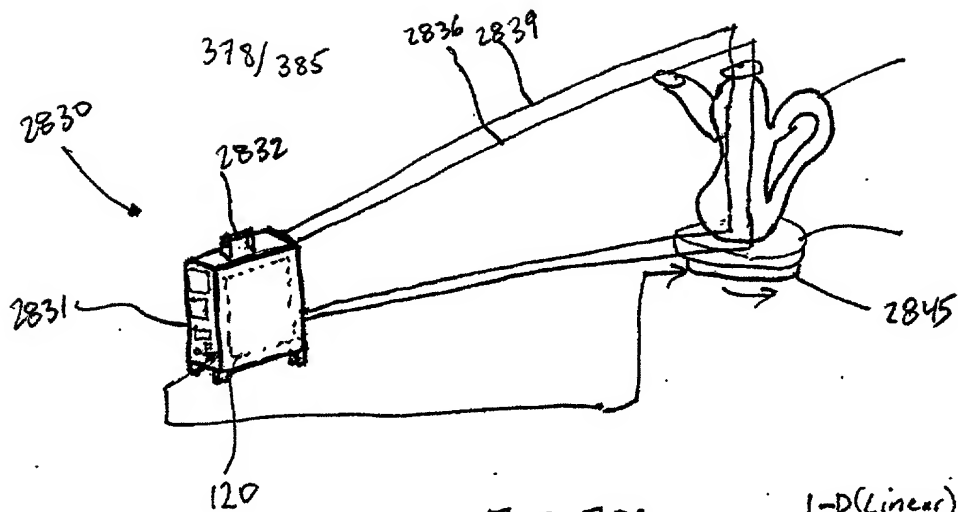


FIG. 78A

1-D (Linear) sensor

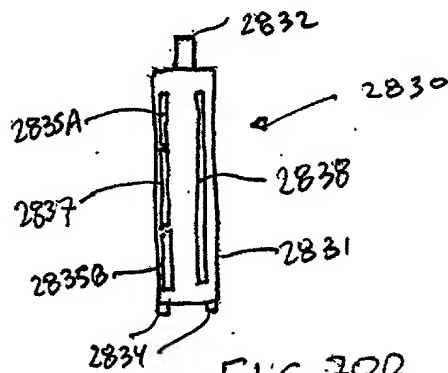


FIG. 78B

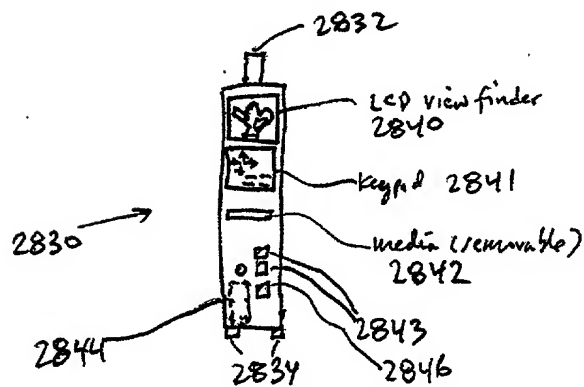
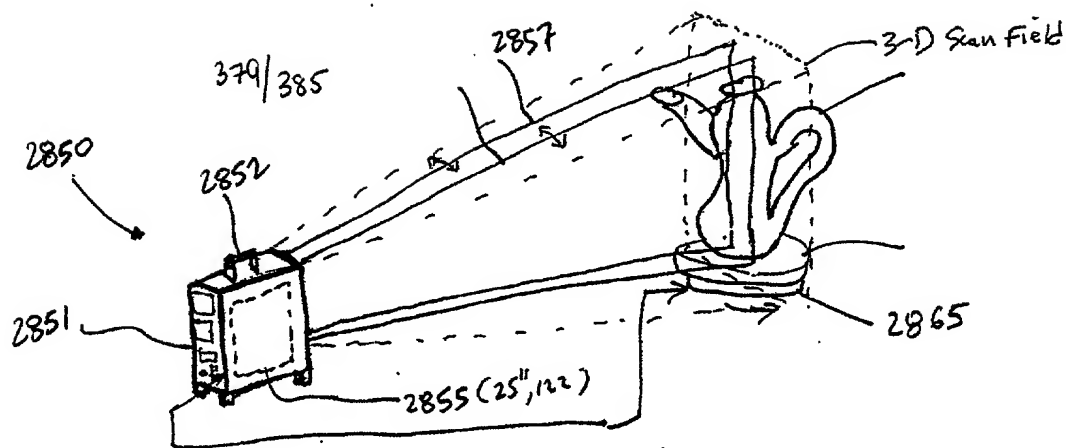
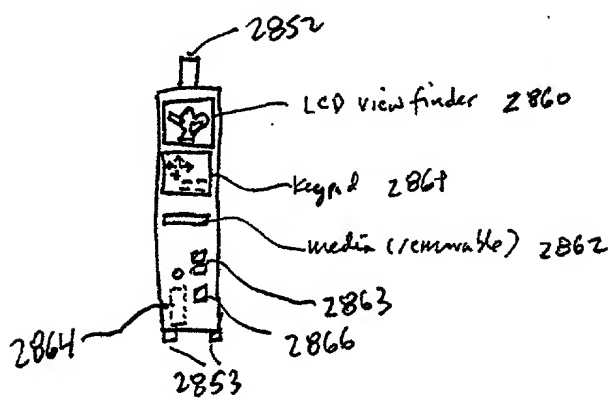
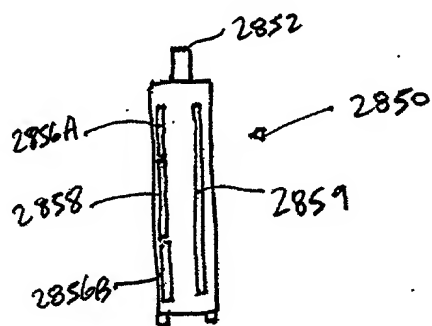


FIG. 78C



2-D (AREA) : Sensor



Automatic Vehicle Identification (AVI)
System of Invented Invention

* Employing overhead profiling
and imaging techniques during
license plate image capture

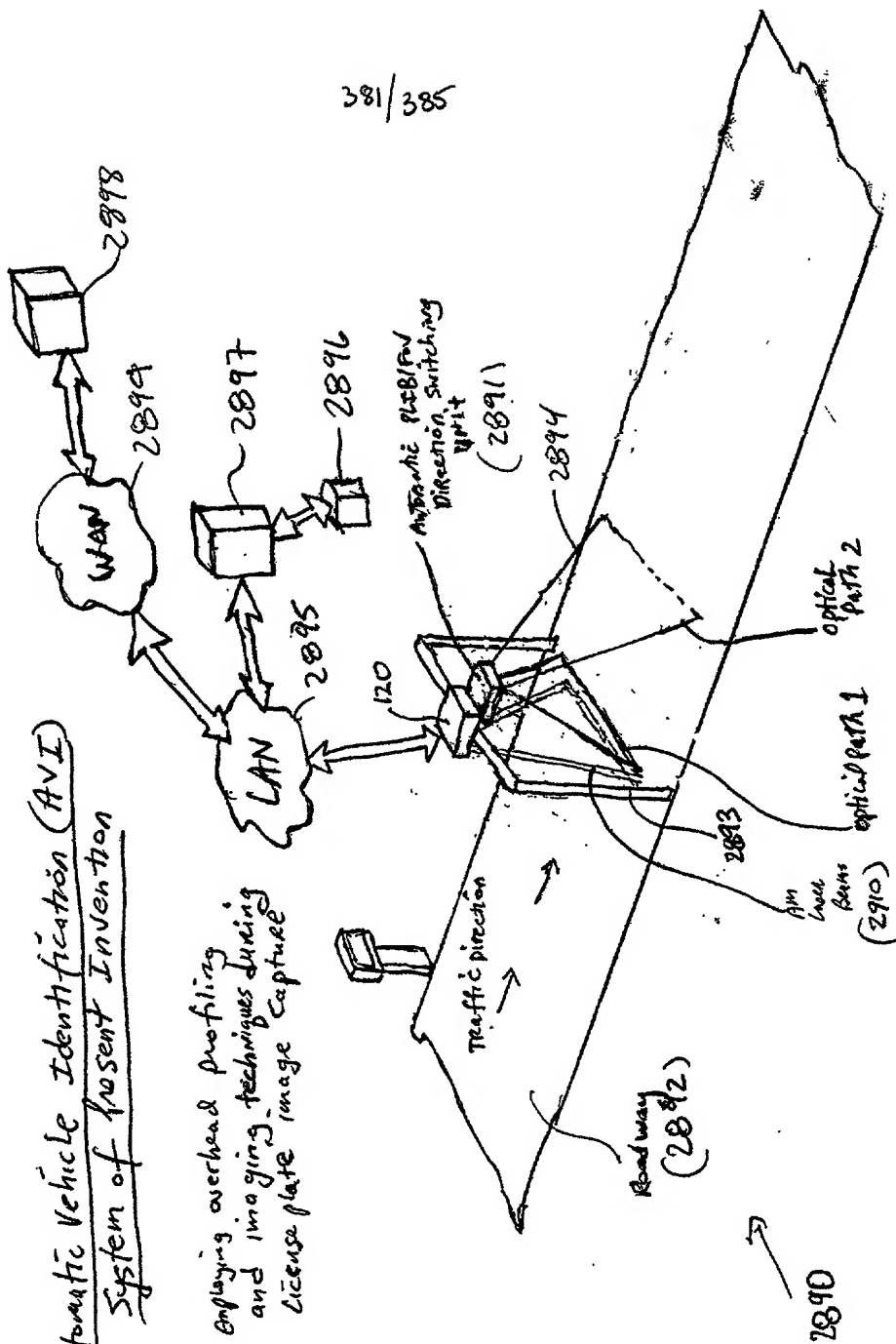


FIG. 81A

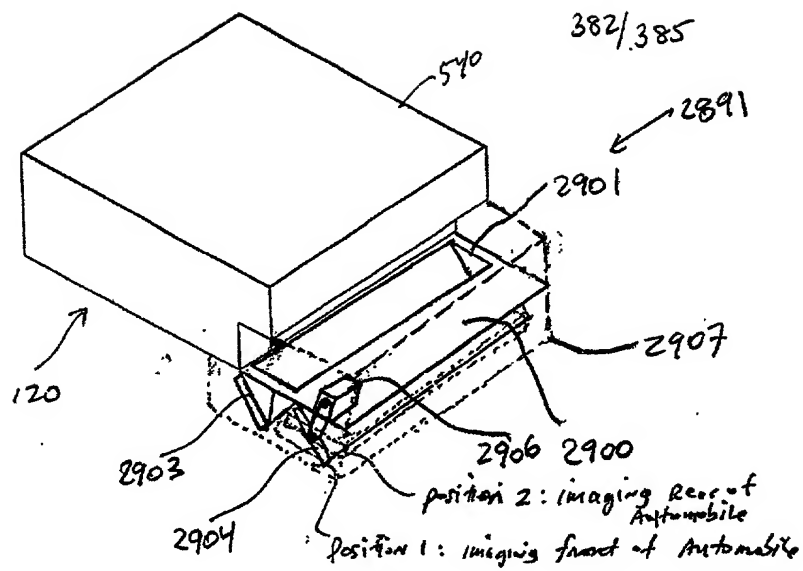


FIG. 8I B

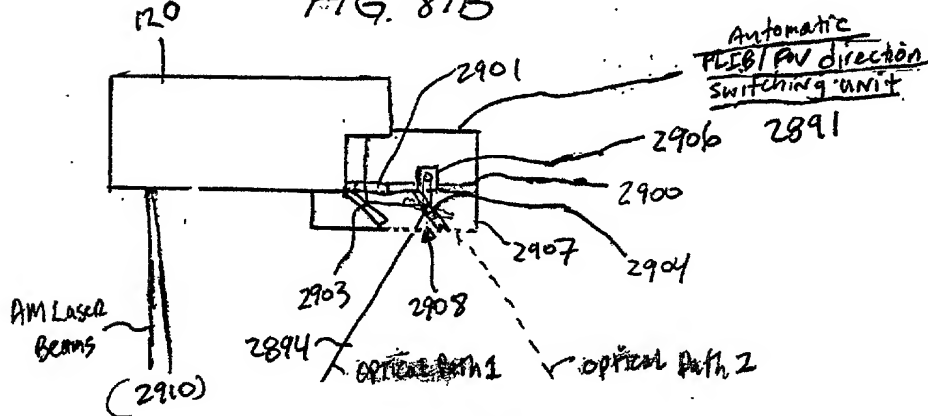


FIG. 8I C

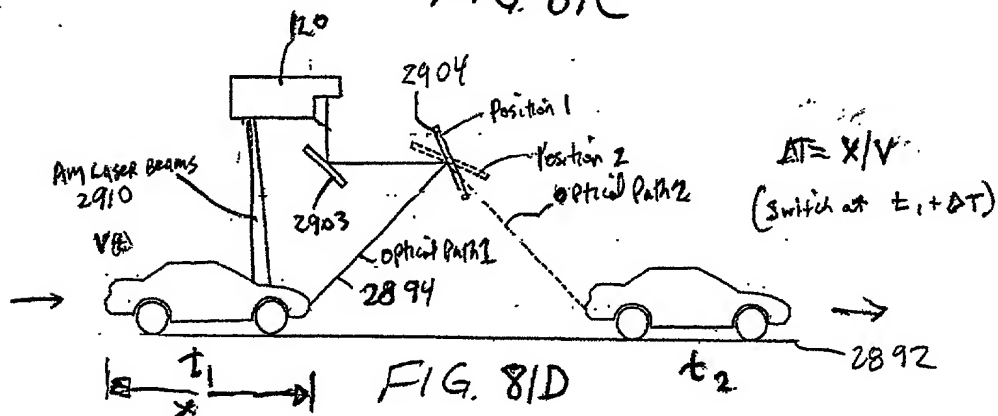
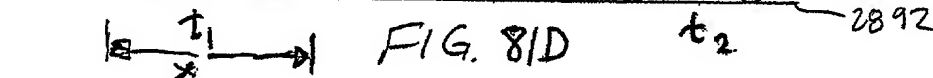


FIG. 8I D



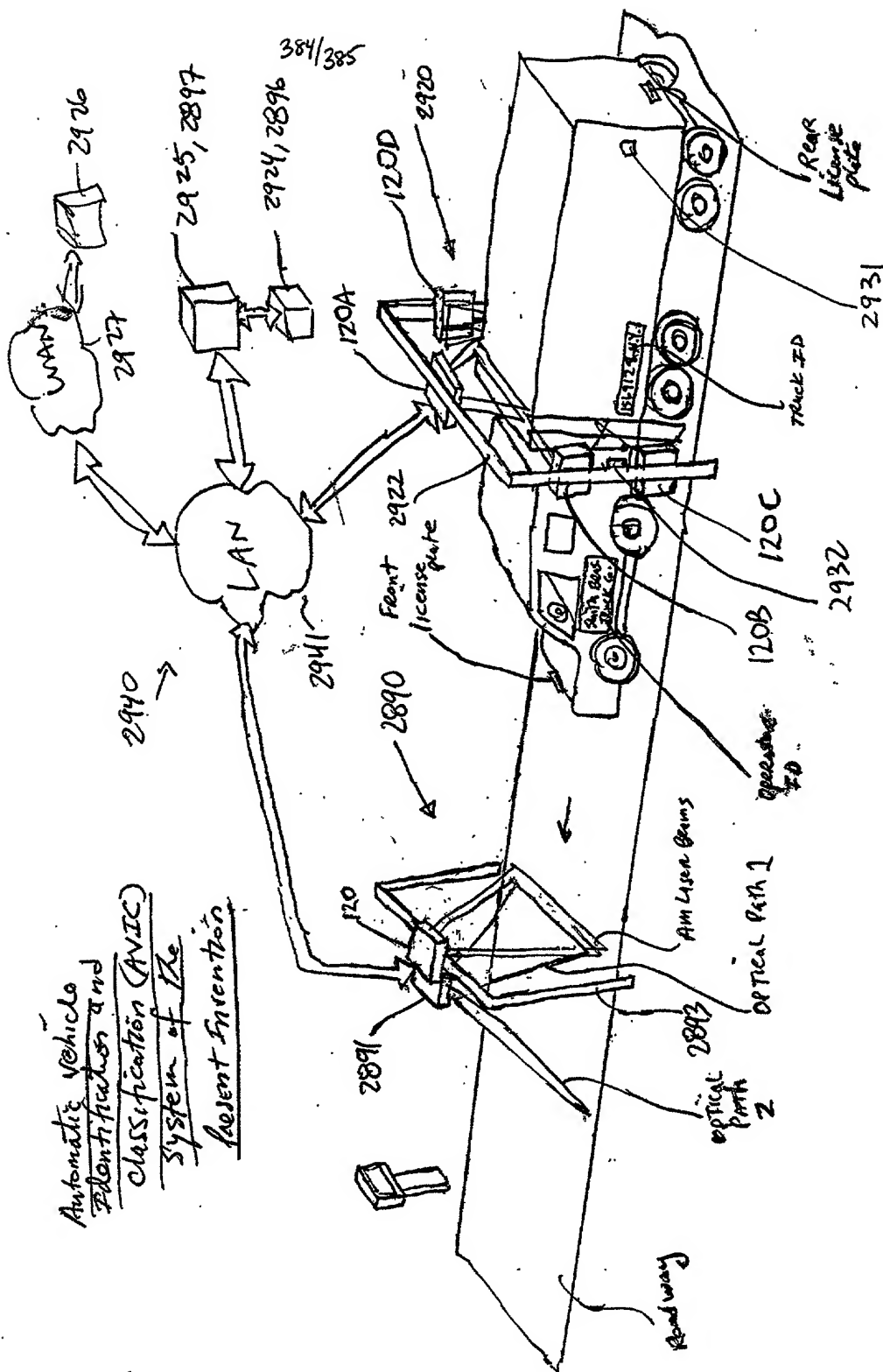


FIG. 83

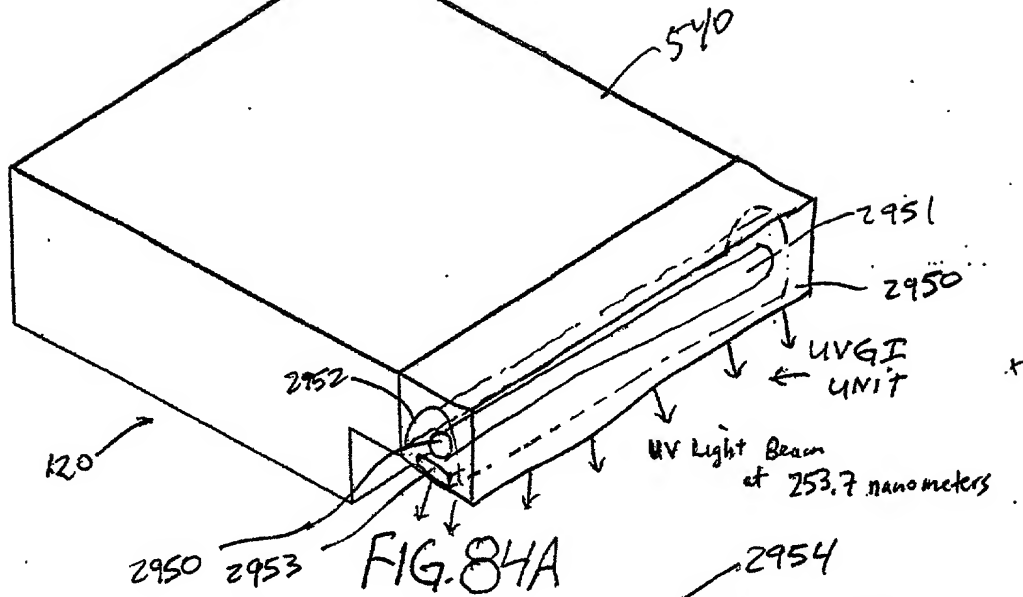
$$385/385$$


FIG. 84A

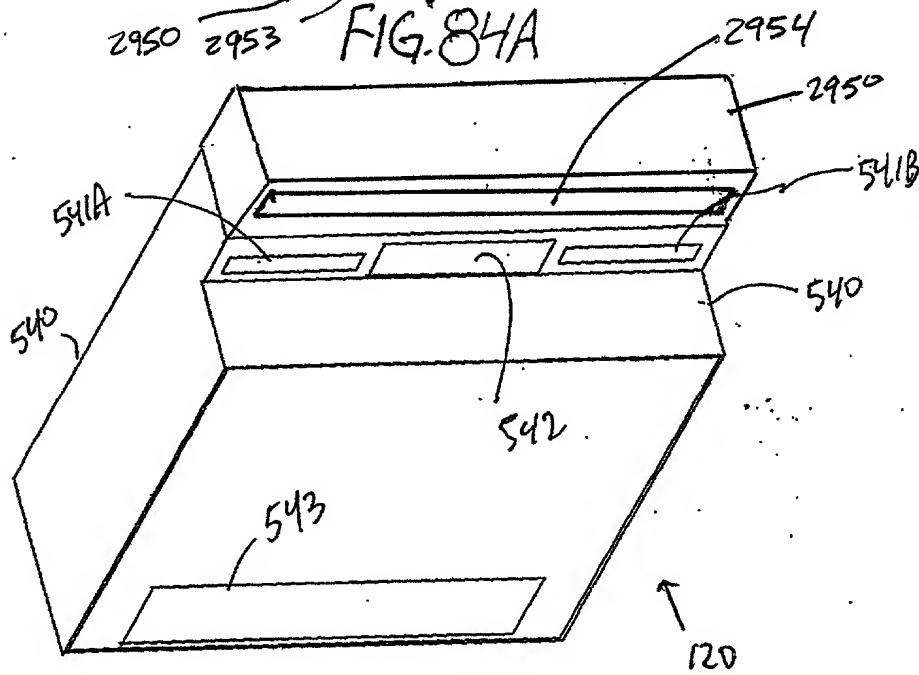


FIG. 84B